SA-WMS25

SERVICE MANUAL

Ver 1.0 2002. 09

AEP Model
UK Model
E Model

- SA-WMS25 is the subwoofer section in HT-K25.

SPECIFICATION

POWER OUTPUT
Rated Power Output at Stereo mode
(6 ohms 1 kHz, THD 0.7 %)
40 W + 40 W

Reference Power Output
(THD 0.7 %)
Front*: 40 W/ch
Center*: 40 W
Surround*: 40 W/ch
(6 ohms)
Subwoofer: 70 W
(3 ohms)

* Depending on the sound field settings and the source, there may be no sound output.

Frequency response
20 Hz – 20 kHz

Enclosure type
Advanced S.A.W. magnetically shielded

Speaker unit
16 cm cone type

Rated frequency range
30 Hz – 200 Hz

High frequency cut-off frequency
150 Hz

General

Power requirements

Area code	Power requirements
CEL, CEK, SP	220–230 V AC, 50/60 Hz
MX	120 V AC, 60 Hz

Power consumption 68 W

Power consumption (during standby mode)
0.8 W

Dimensions (w/h/d) 224 × 318.5 × 344 mm including front panel

Mass (Approx.) 7.1 kg

Design and specifications are subject to change without notice.

NOTE:
- [ ] is the specifications when connecting TA-VE25.
- Abbreviation
  CEK : UK model
  CEL : AEP model
  MX : Mexican model

SUBWOOFER

9-874-149-01
2002I1600-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY

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Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

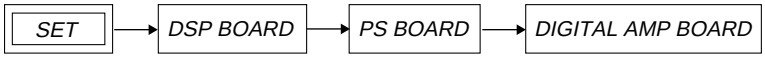
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

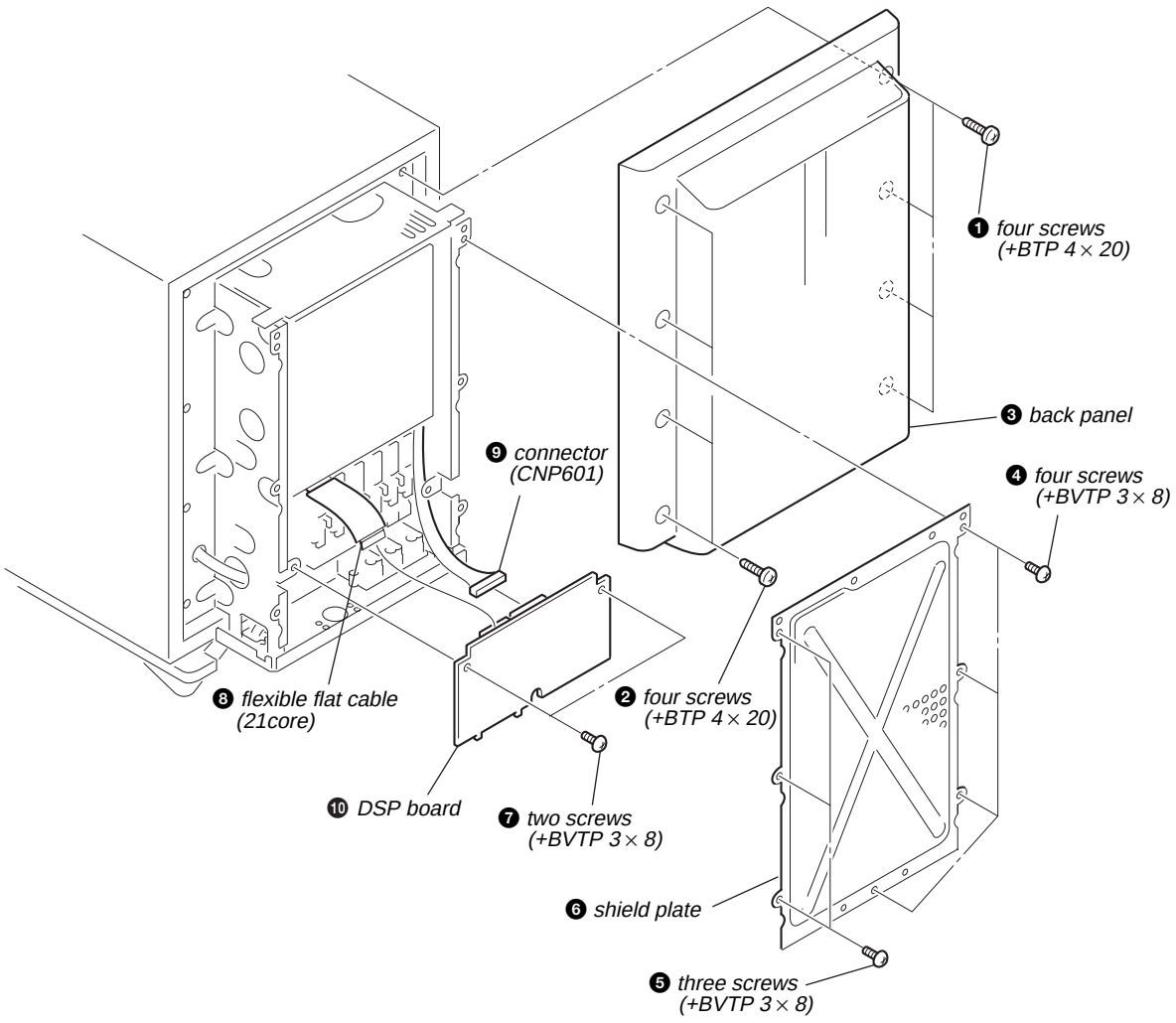
SECTION 1
DISASSEMBLY

• The equipment can be removed using the following procedure.

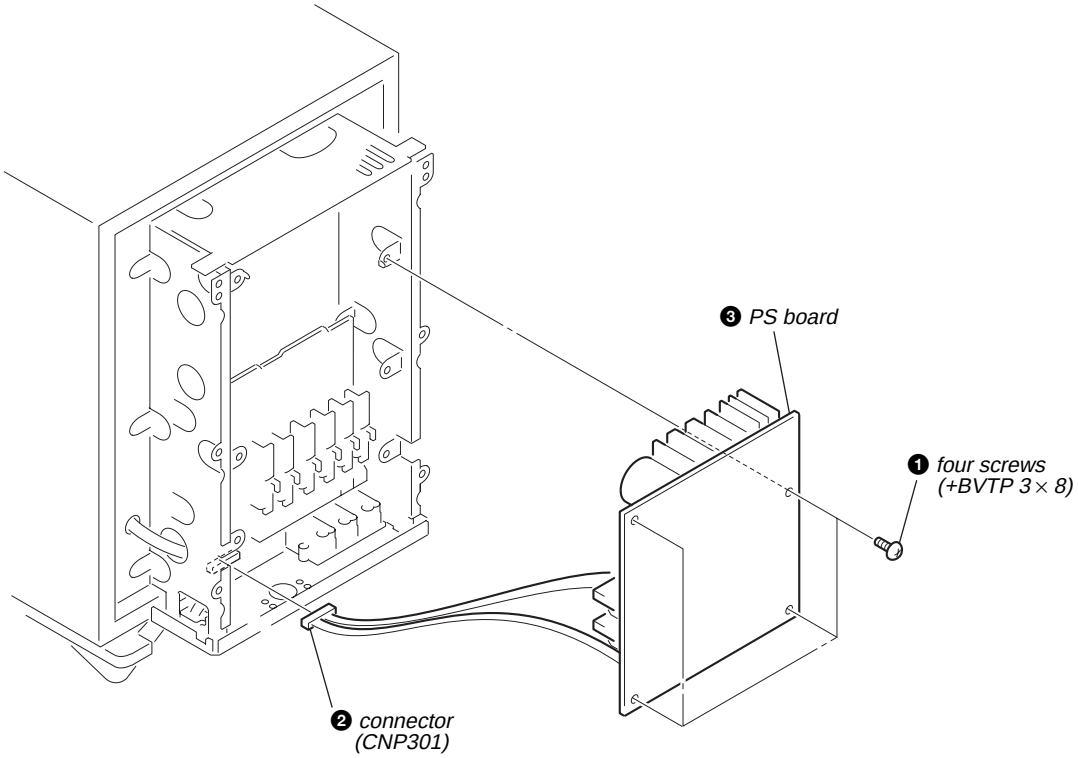


Note: Follow the disassembly procedure in the numerical order given.

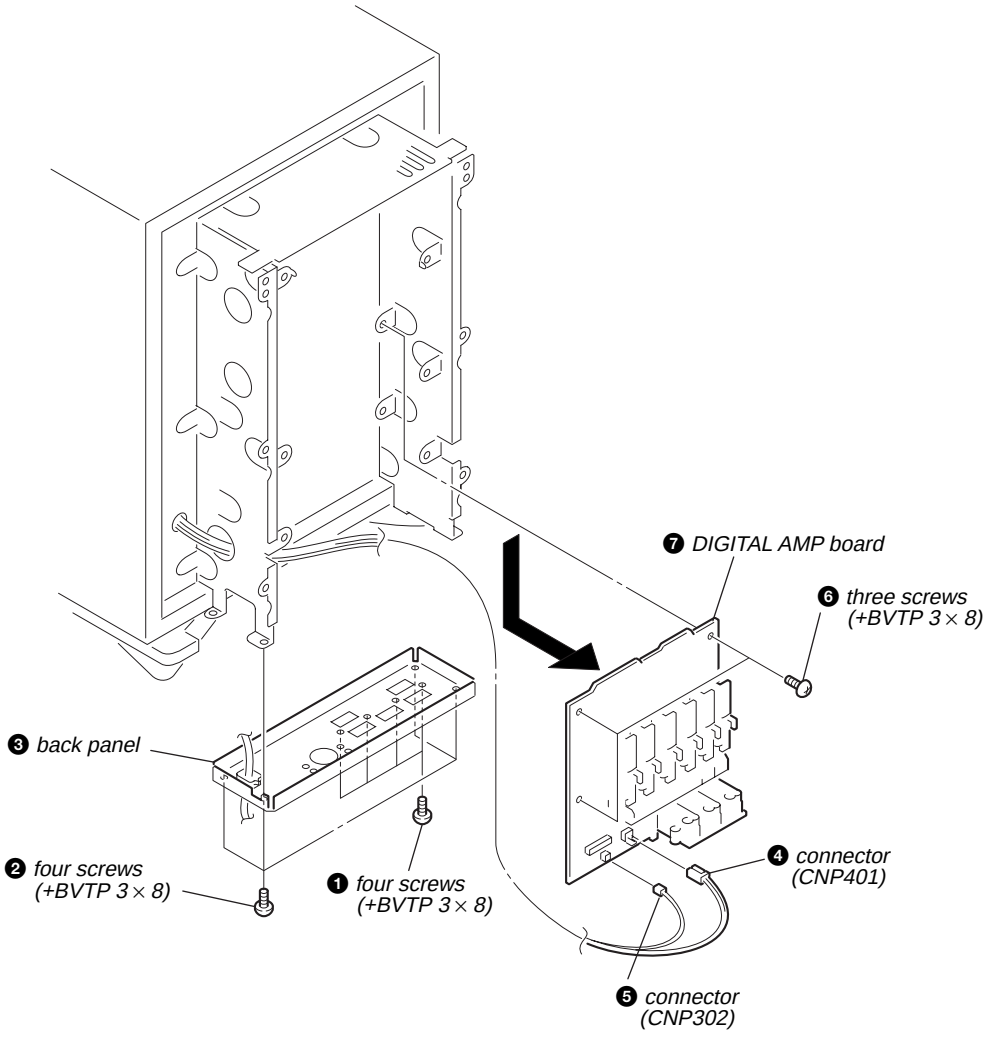
1-1. DSP Board


❶ four screws (+BTP 4× 20)
❸ back panel
❹ four screws (+BVTP 3× 8)
❾ connector (CNP601)
❽ flexible flat cable (21core)
❷ four screws (+BTP 4× 20)
❿ DSP board
❼ two screws (+BVTP 3× 8)
❻ shield plate
❺ three screws (+BVTP 3× 8)

1-2. PS Board



1-3. DIGITAL AMP Board



SECTION 2
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Printed Wiring Boards:

- ⚬——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern from the side which enables seeing.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

Note on Schematic Diagram:

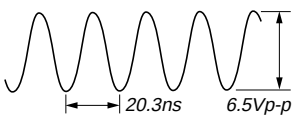
- All capacitors are in µF unless otherwise noted. p: pF. 50 WV or less are not indicated except for electrolytics and tantalums.
- ⊣▭⊢ : nonflammable resistor
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation
- △ : internal component

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line
- ▬ ▬ ▬ : B– Line
- Voltages are dc with respect to ground under no-signal conditions.
  no mark : Power on
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : ANALOG INPUT
  ⇛ : DIGITAL INPUT
- Abbreviation
  MX : Mexican model

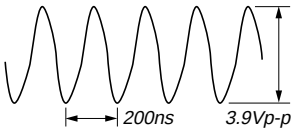
- **Waveforms**

① IC300 ④



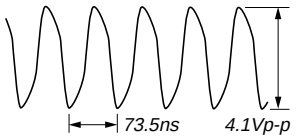
2V/DIV, 10ns/DIV

② IC501 ㉝ (X1)



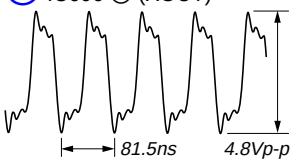
1V/DIV, 100ns/DIV

③ IC605 ⑫ (MCLK2)



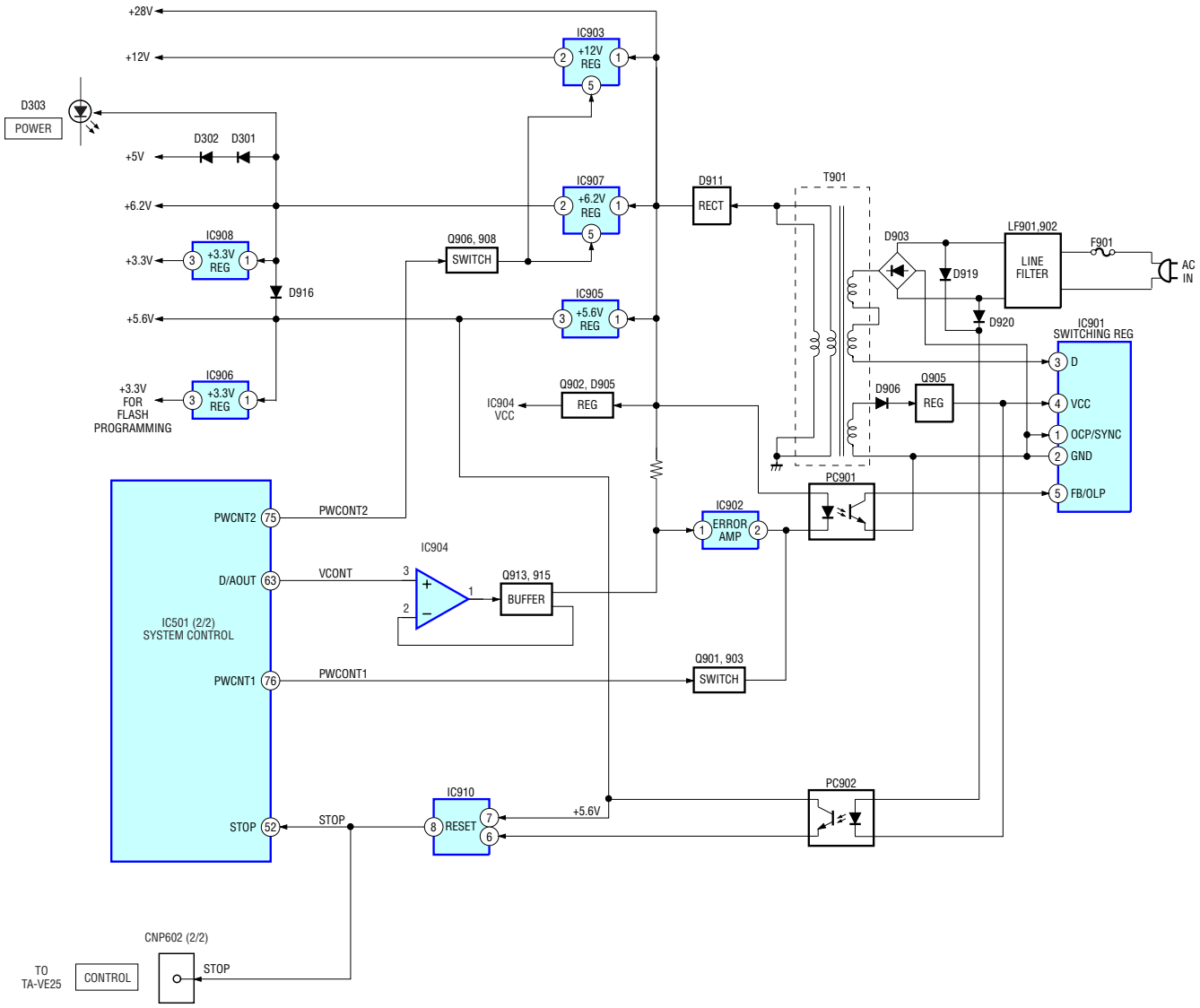
1V/DIV, 40ns/DIV

④ IC606 ㉑ (XOUT)

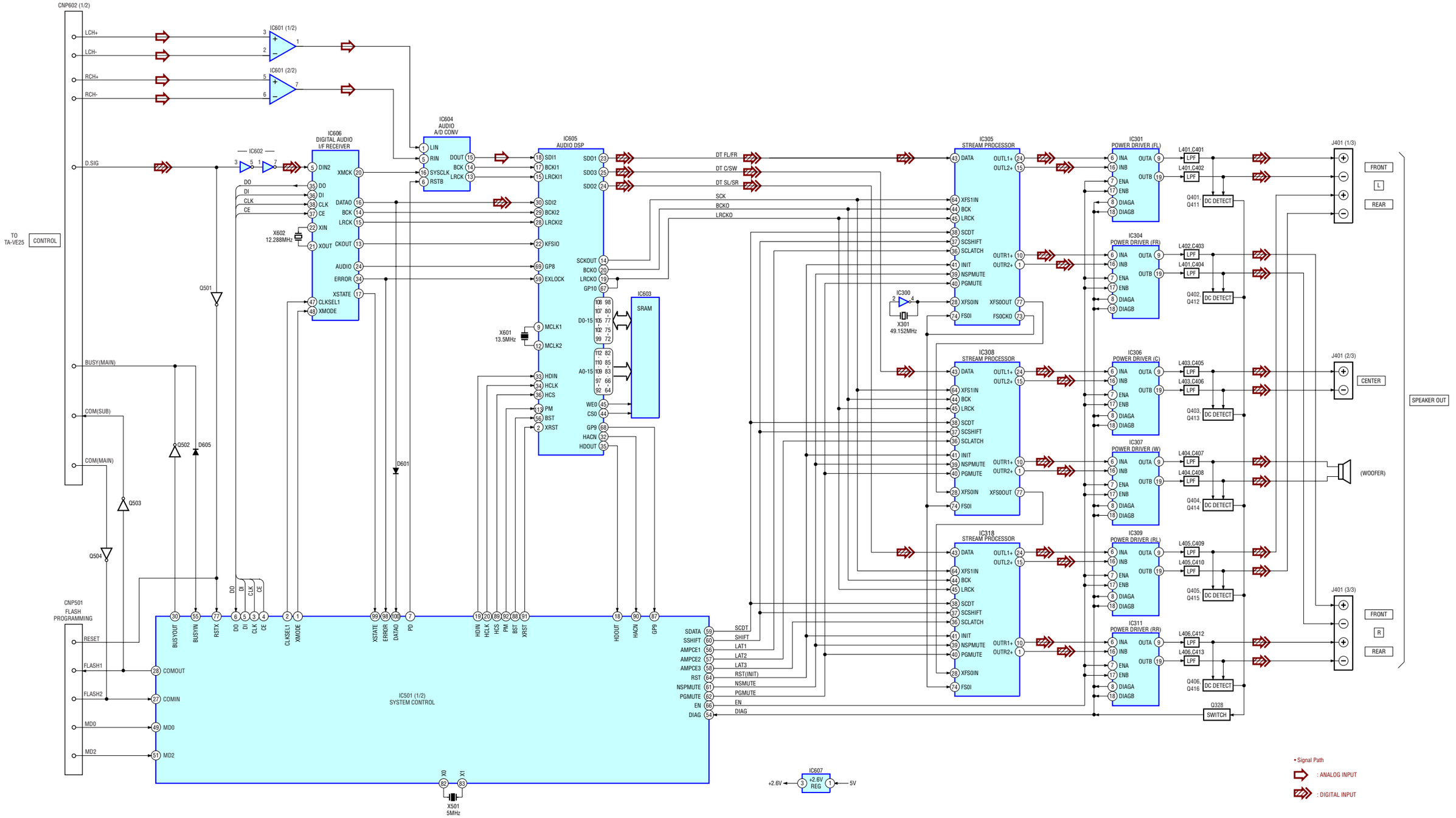


1V/DIV, 40ns/DIV

2-1. Block Diagrams — Power Section —



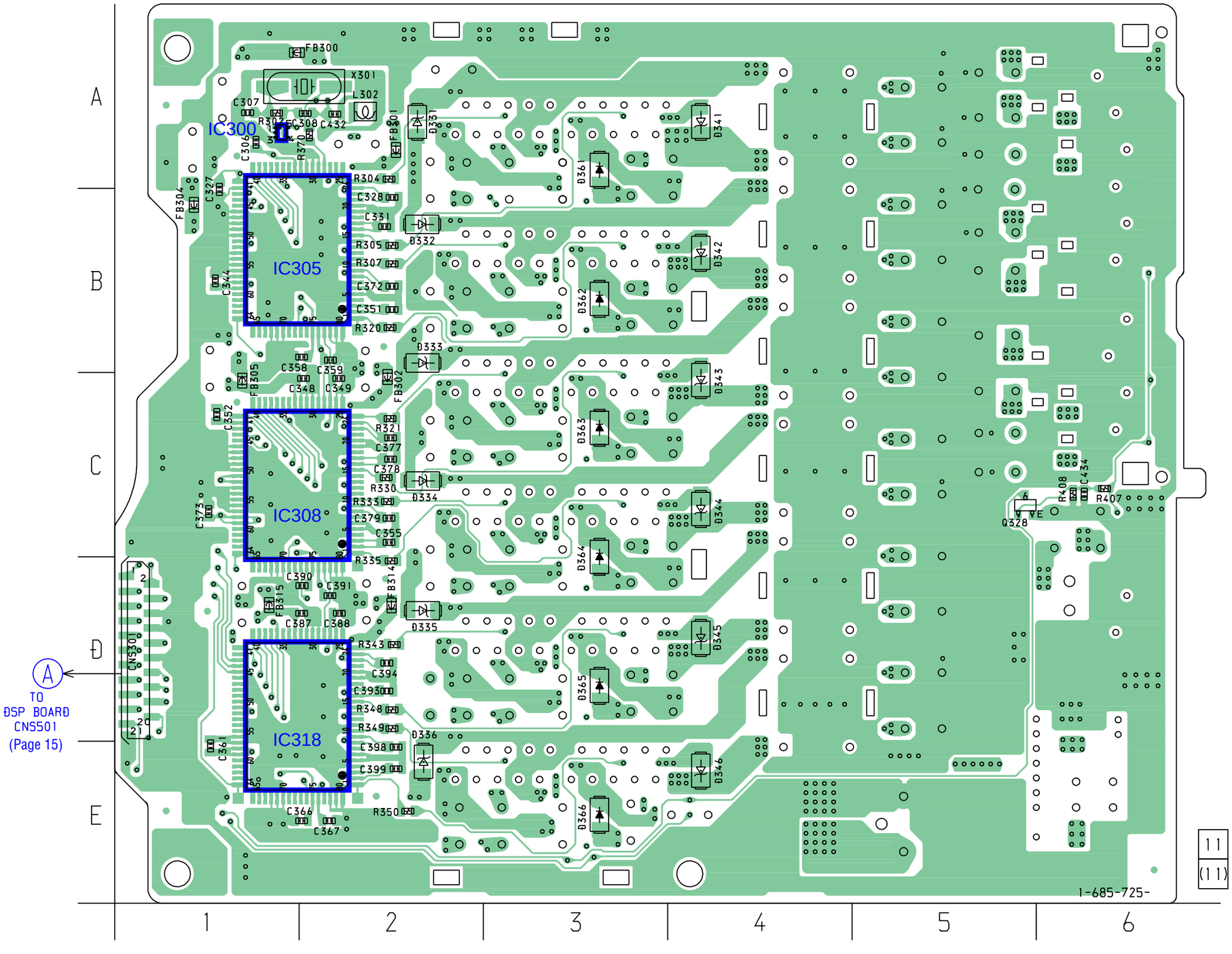
— DSP/AMP Section —



2-2. Printed Wiring Board — DIGITAL AMP Section (Side A) —

• : Uses unleaded solder.

【DIGITAL AMP BOARD】(SIDE A)



• Semiconductor Location

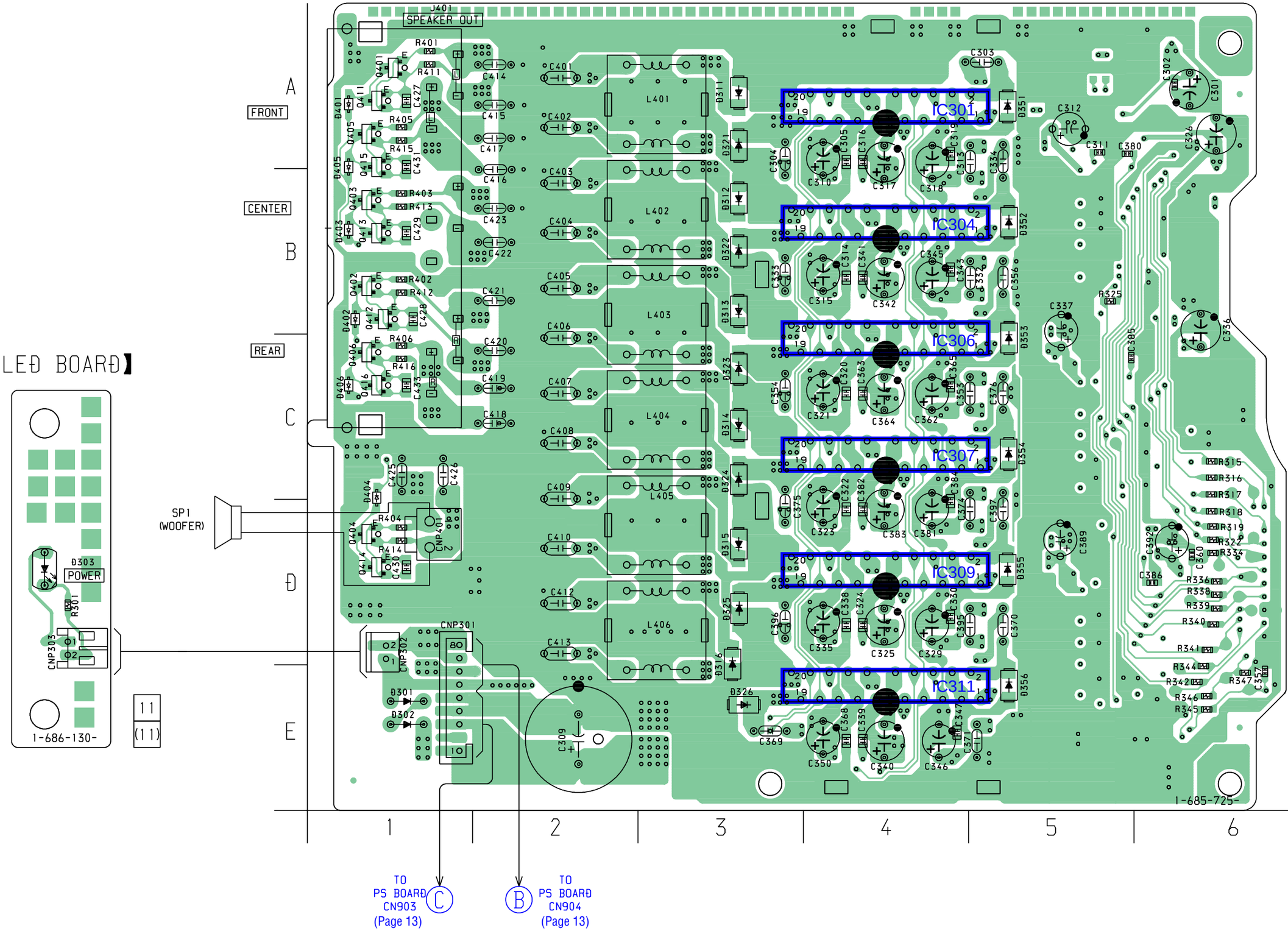
Ref. No.	Location
D331	A-2
D332	B-2
D333	B-2
D334	C-2
D335	D-2
D336	D-2
D341	A-4
D342	B-4
D343	C-4
D344	C-4
D345	D-4
D346	E-4
D361	A-3
D362	B-3
D363	C-3
D364	D-3
D365	D-3
D366	E-3
IC300	A-1
IC305	B-1
IC308	C-1
IC318	D-1
Q328	C-5

2-3. Printed Wiring Boards — DIGITAL AMP Section (Side B) —

• : Uses unleaded solder.

【DIGITAL AMP BOARD】(SIDE B)

【LED BOARD】

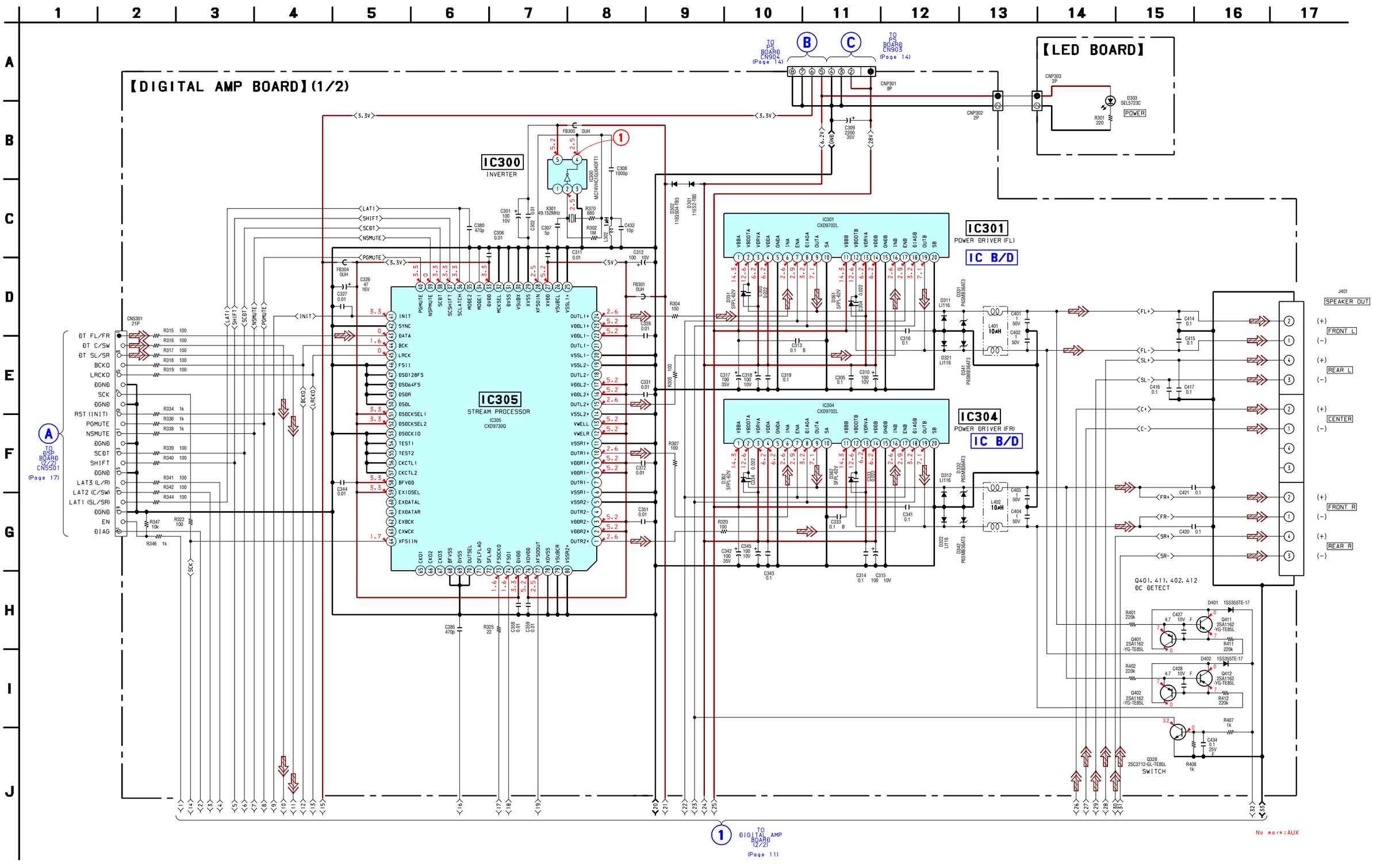


• **Semiconductor Location**

Ref. No.	Location
D301	E-1
D302	E-1
D311	A-3
D312	B-3
D313	B-3
D314	C-3
D315	D-3
D316	D-3
D321	A-3
D322	B-3
D323	C-3
D324	C-3
D325	D-3
D326	E-3
D351	A-5
D352	B-5
D353	C-5
D354	C-5
D355	D-5
D356	E-5
D401	A-1
D402	B-1
D403	B-1
D404	C-1
D405	A-1
D406	C-1
IC301	A-4
IC304	B-4
IC306	C-4
IC307	C-4
IC309	D-4
IC311	E-4
Q401	A-1
Q402	B-1
Q403	B-1
Q404	D-1
Q405	A-1
Q406	C-1
Q411	A-1
Q412	B-1
Q413	B-1
Q414	D-1
Q415	A-1
Q416	C-1

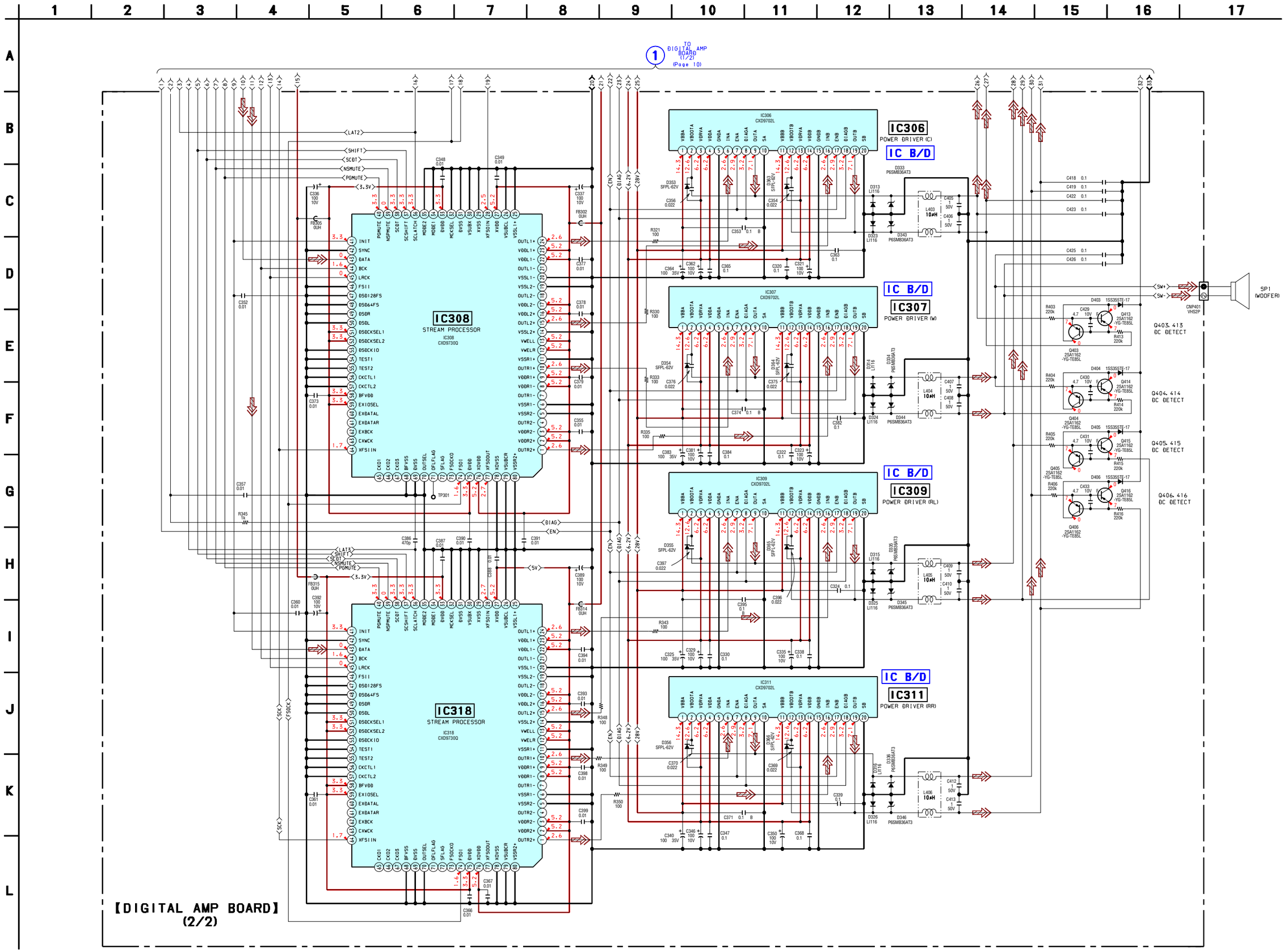
2-4. Schematic Diagram — DIGITAL AMP Section (1/2) —

• See page 18 for IC Block Diagrams.

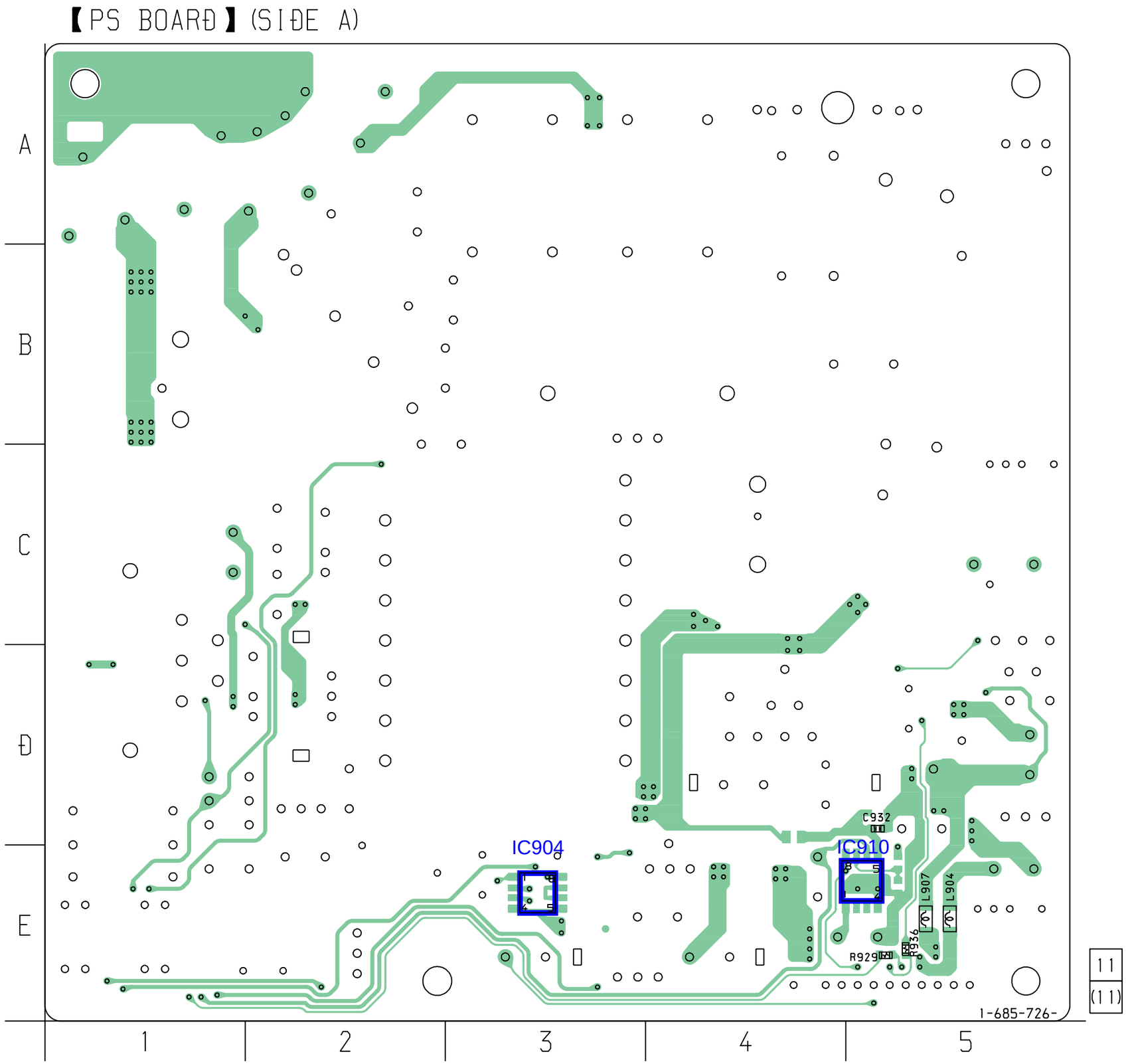


2-5. Schematic Diagram — DIGITAL AMP Section (2/2) —

• See page 18 for IC Block Diagrams.



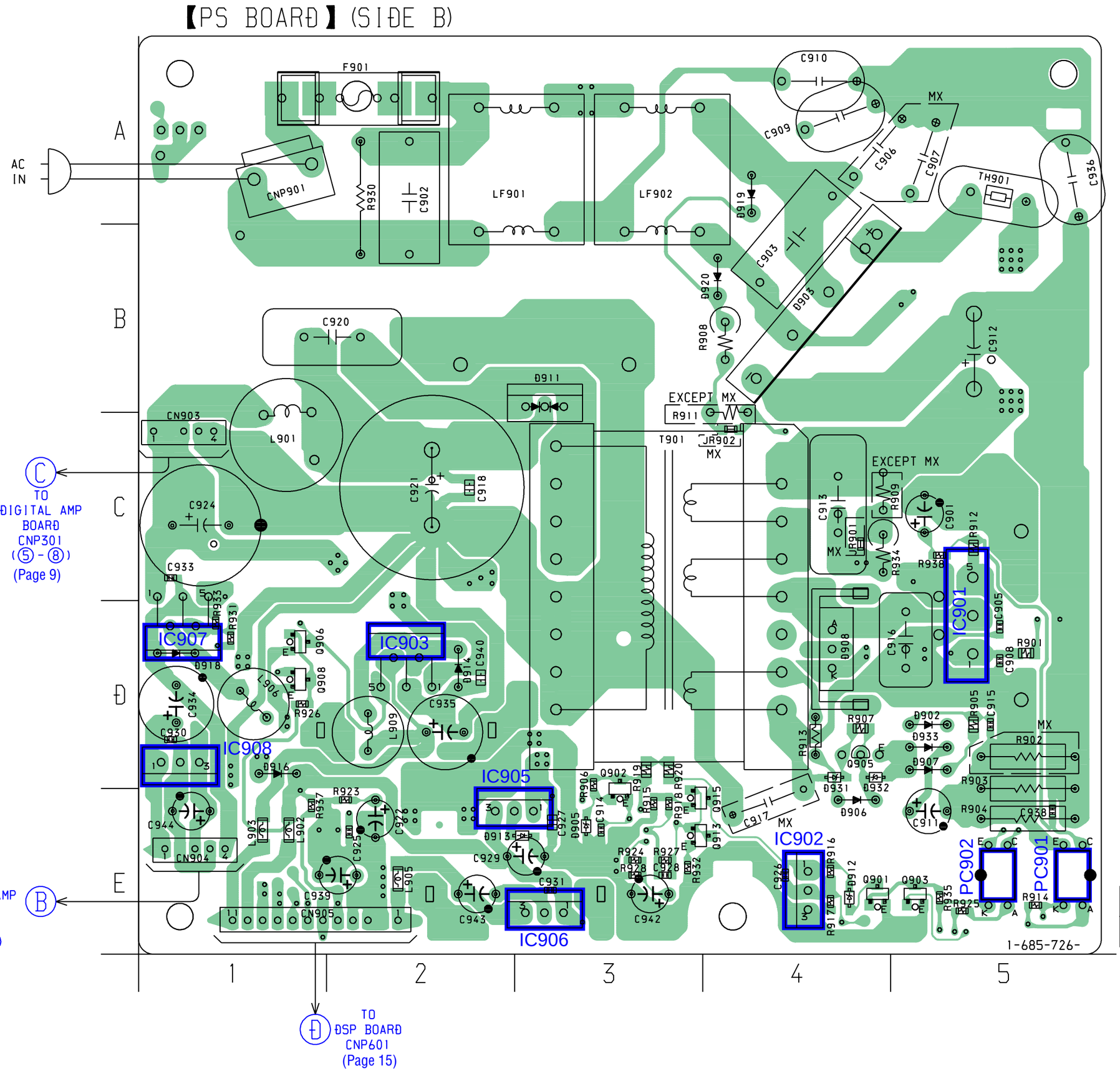
2-6. Printed Wiring Board — PS Board (Side A) — • : Uses unleaded solder.



• **Semiconductor Location**

Ref. No.	Location
IC904	E-3
IC910	E-5

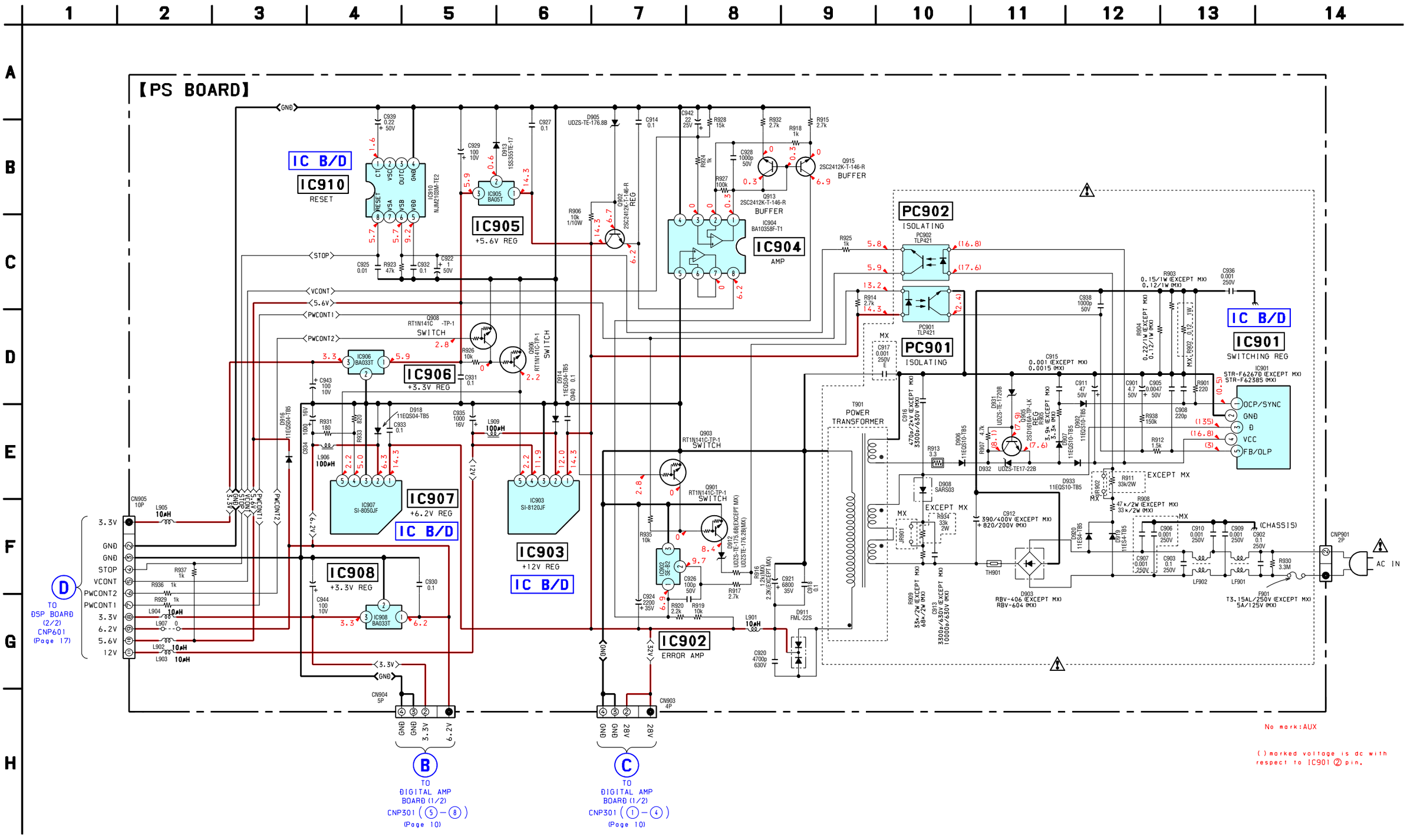
2-7. Printed Wiring Board — PS Board (Side B) — • : Uses unleaded solder.



• **Semiconductor Location**

Ref. No.	Location
D902	D-5
D903	B-4
D905	E-3
D906	E-4
D907	D-5
D908	D-4
D911	B-3
D912	E-4
D913	E-2
D914	D-2
D916	D-1
D918	D-1
D919	A-4
D920	B-4
D931	E-4
D932	E-4
D933	D-5
IC901	D-5
IC902	E-4
IC903	D-2
IC905	D-2
IC906	E-3
IC907	D-1
IC908	D-1
PC901	E-5
PC902	E-5
Q901	E-4
Q902	D-3
Q903	E-5
Q905	D-4
Q906	D-1
Q908	D-1
Q913	E-4
Q915	E-4

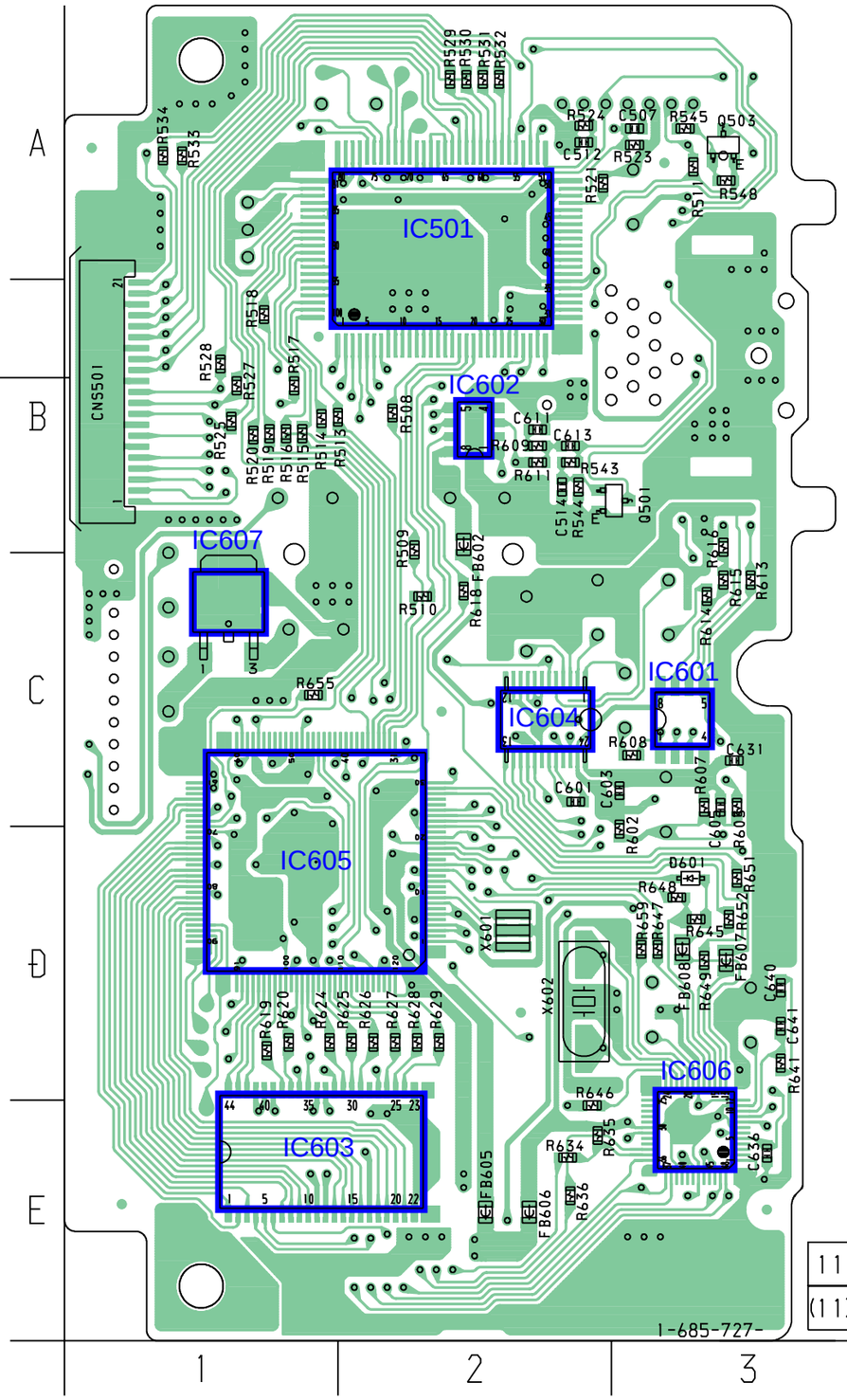
2-8. Schematic Diagram — PS Board — • See page 19 for IC Block Diagrams.



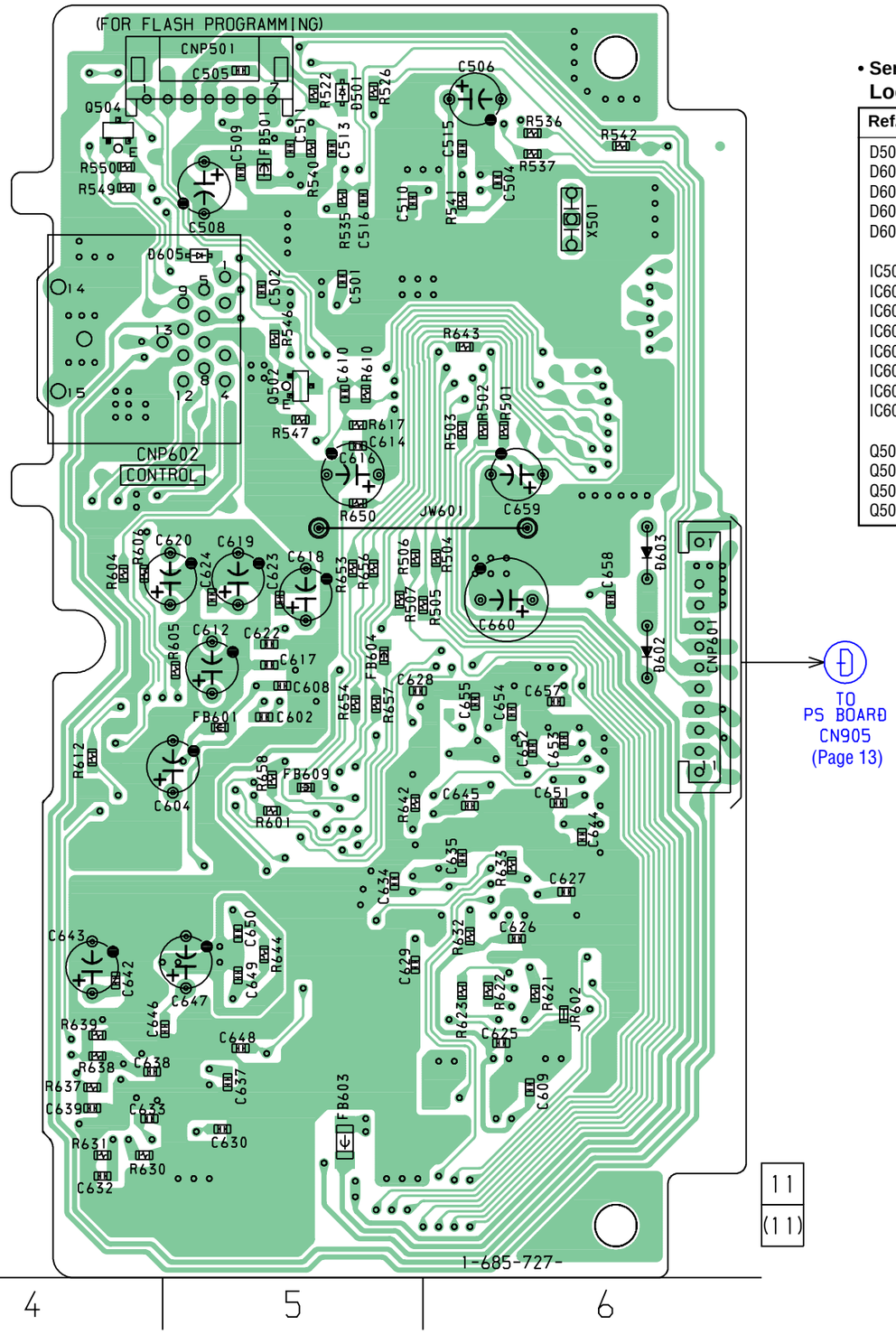
2-9. Printed Wiring Board — DSP Board —

• : Uses unleaded solder.

【DSP BOARD】(SIDE A)



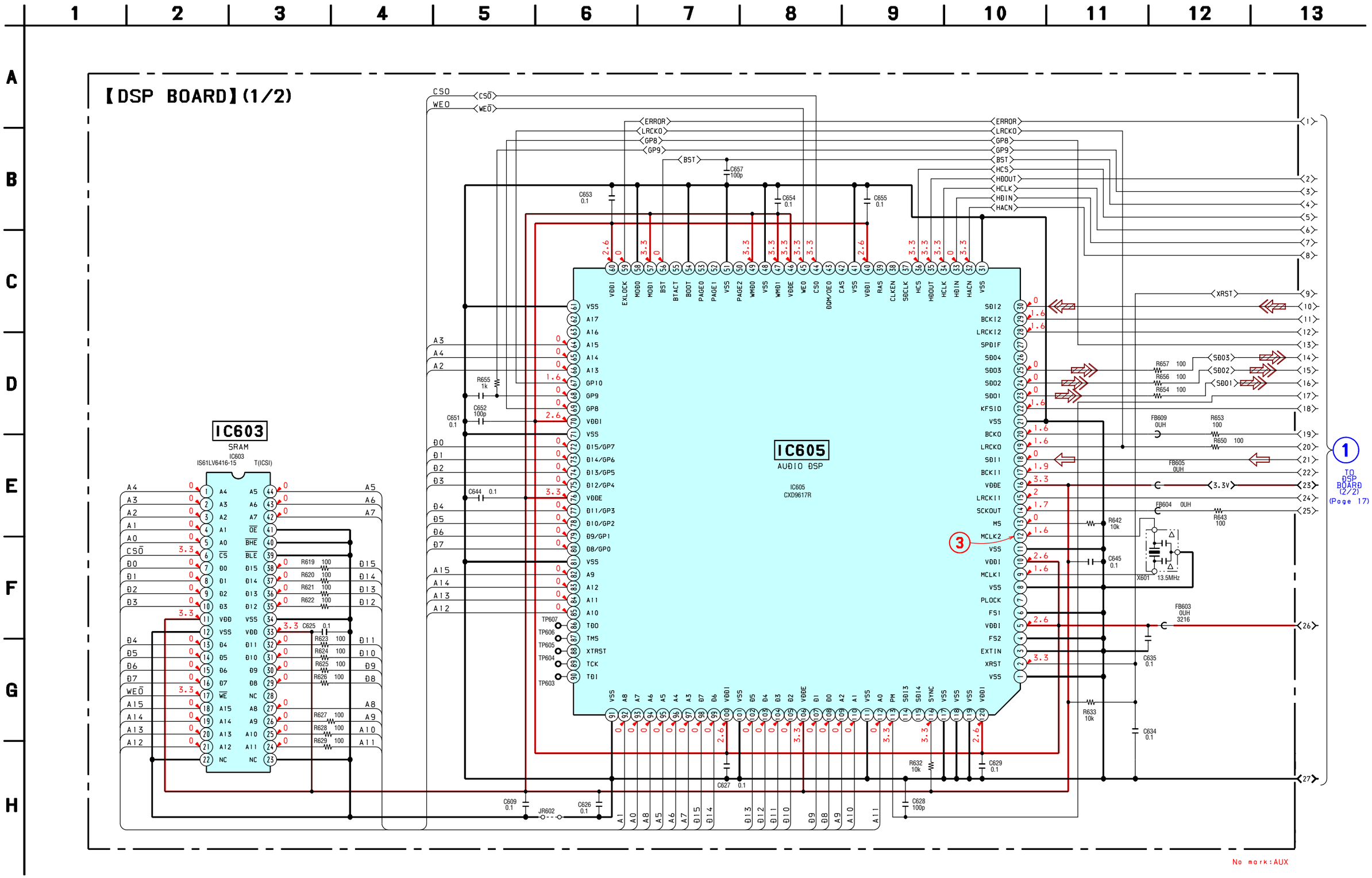
【DSP BOARD】(SIDE B)



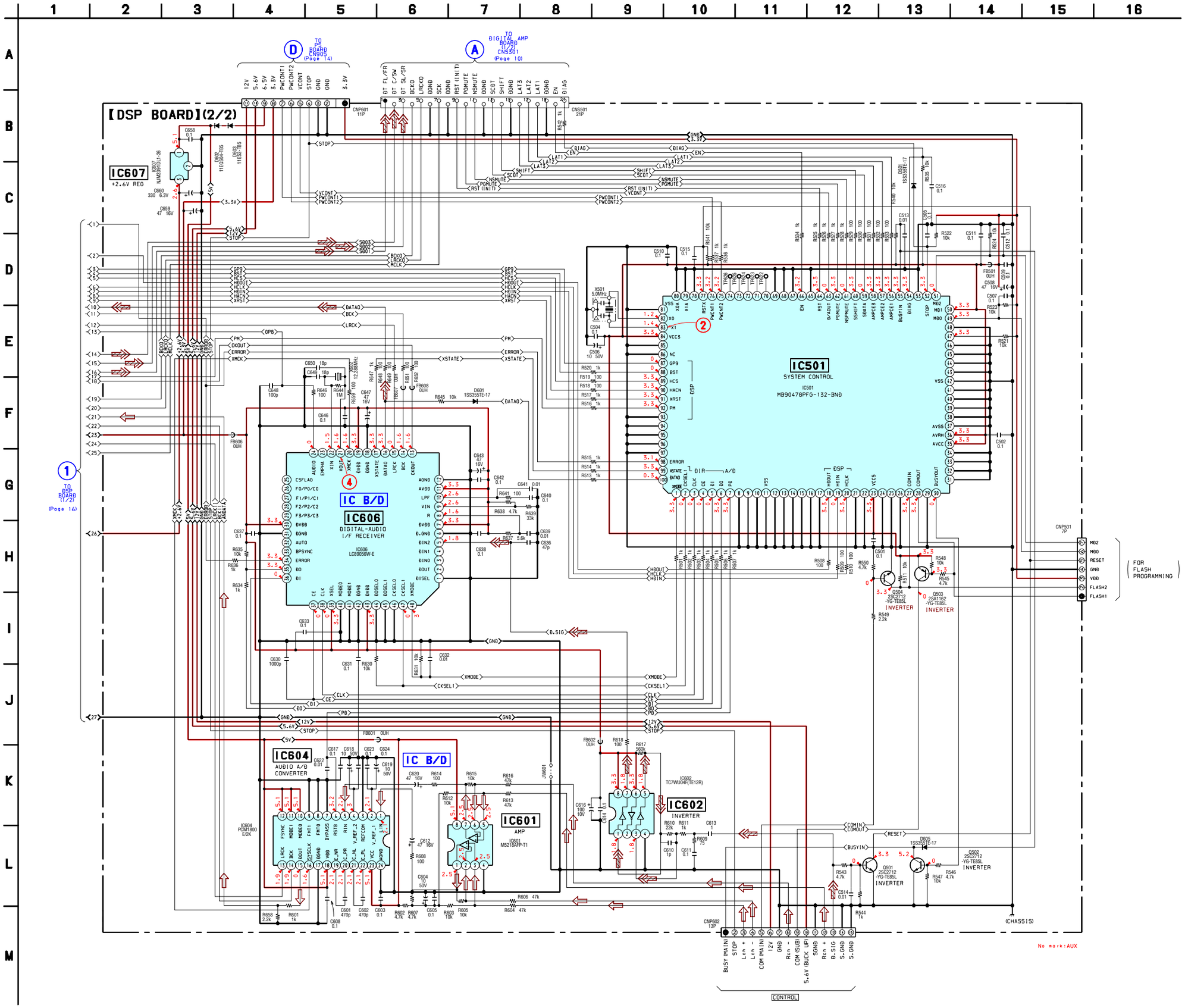
• Semiconductor Location

Ref. No.	Location
D501	A-5
D601	D-3
D602	C-6
D603	C-6
D605	A-5
IC501	A-2
IC601	C-3
IC602	B-2
IC603	E-1
IC604	C-2
IC605	D-1
IC606	D-3
IC607	B-1
Q501	B-3
Q502	B-5
Q503	A-3
Q504	A-4

2-10. Schematic Diagram — DSP Board (1/2) — • See page 22 for IC Pin Function Description.



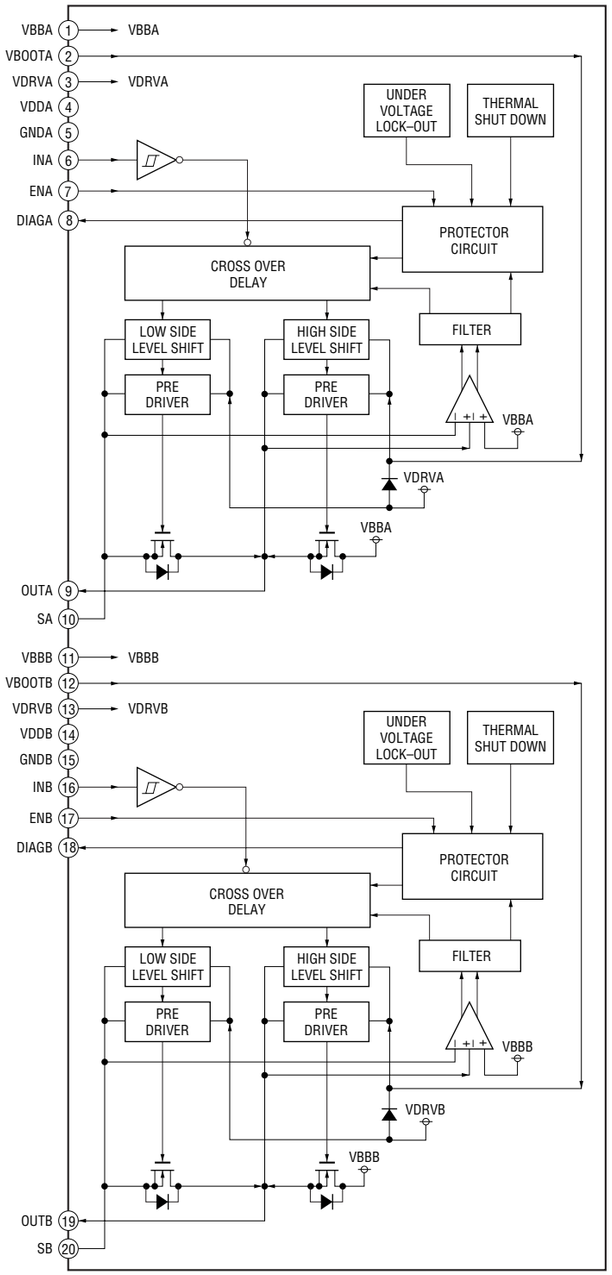
2-11. Schematic Diagram — DSP Board (2/2) — • See page 18 for IC Block Diagrams. • See page 20 for IC Pin Function Description.



2-12. IC Block Diagrams

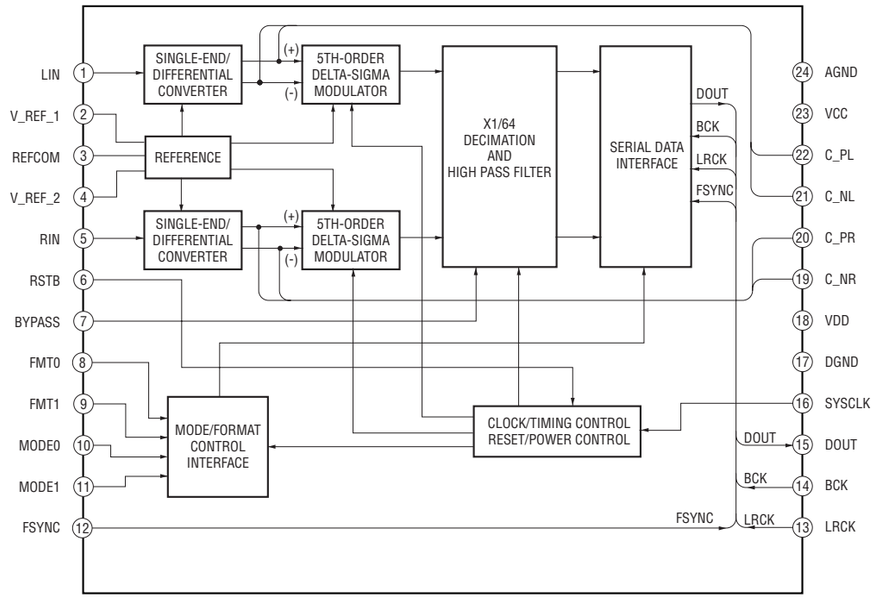
— DIGITAL AMP Board —

IC301, 304, 306, 307, 309, 311
CXD9702L

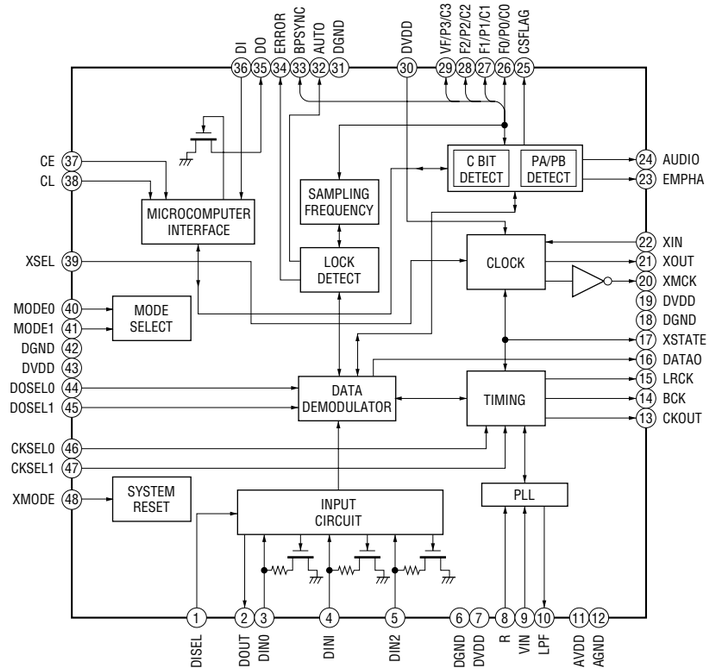


— DSP Board —

IC604 PCM1800-E/2K

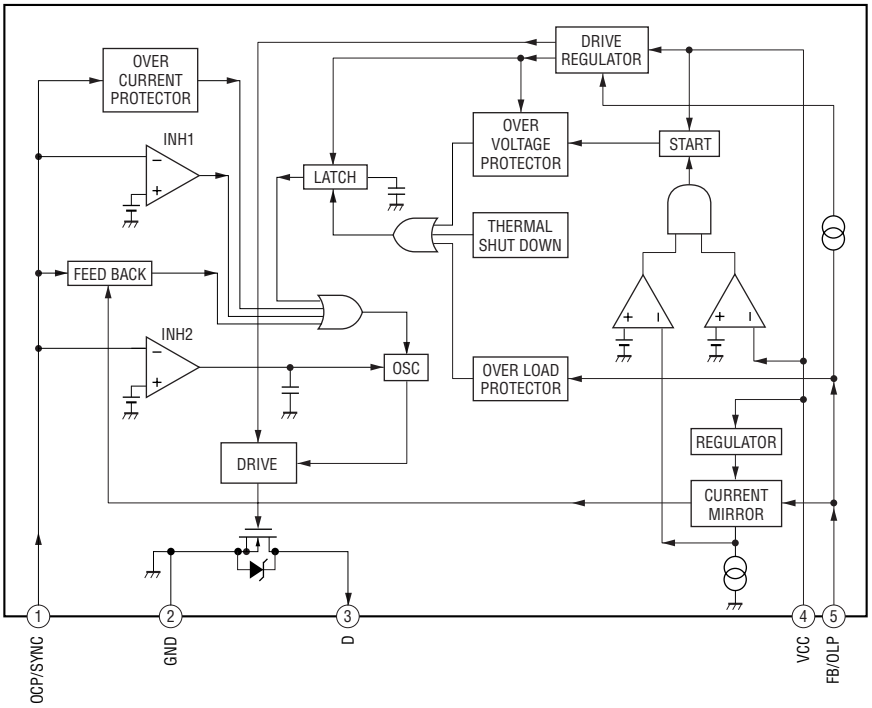


IC606 LC89056W-E

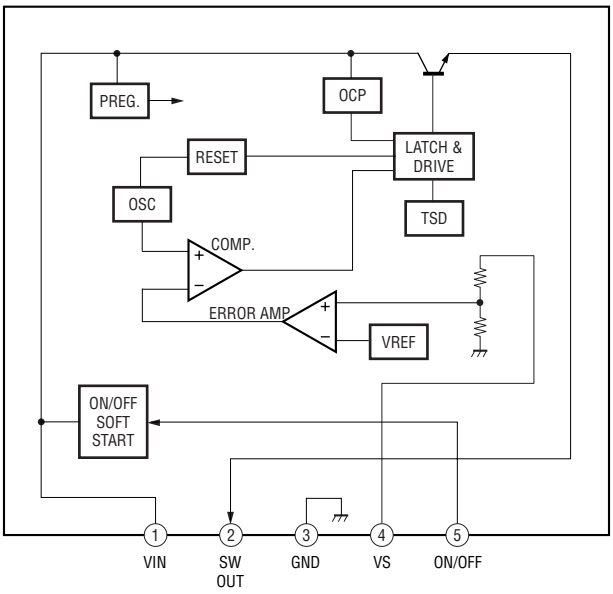


— PS Board —

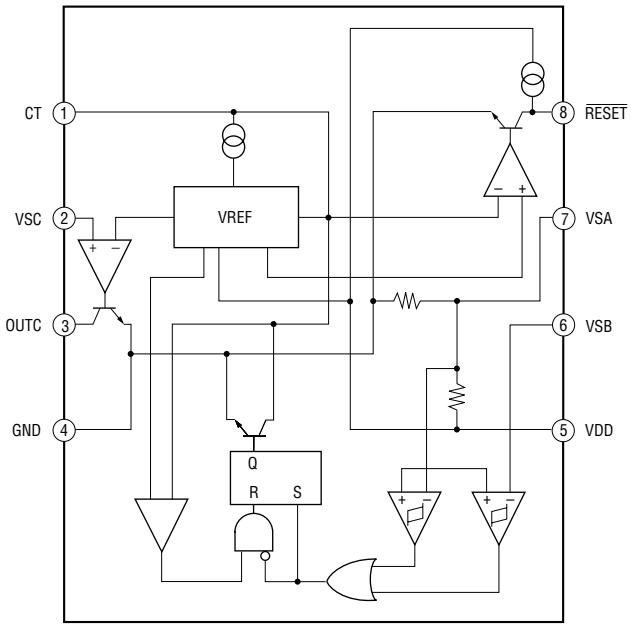
IC901 STR-F6267D/STR-F6238S



IC903 SI-8120JF
IC907 SI-8050JF



IC910 NM2103M-TE2



2-13. IC Pin Function Description

• IC501 MB90478PFG-132-BND (MX:MB90478PFG-133-BND) SYSTEM CONTROL (DIGITAL AMP Board)

Pin No.	Pin Name	I/O	Description
1	XMODE	O	Reset signal output to the DIR (IC606)
2	CKSEL1	O	Clock selection signal output to the DIR (IC606)
3	CLK	O	Clock output to the DIR (IC606)
4	CE	O	Latch signal output to the DIR (IC606)
5	DI	O	Serial data output to the DIR (IC606)
6	DO	I	Serial data input from the DIR (IC606)
7	PD	O	Reset signal output to the A/D converter (IC604)
8	P27	—	General purpose I/O port Not used (ground)
9, 10	P30, P31	—	General purpose I/O port Not used (ground)
11	VSS	—	Ground
12 to 17	P32 to P37	—	General purpose I/O port Not used (ground)
18	HDOUT	I	Data input from the DSP (IC605)
19	HDIN	O	Data output to the DSP (IC605)
20	HCLK	O	Clock output to the DSP (IC605)
21, 22	P43, P44	—	General purpose I/O port Not used (ground)
23	VCC5	—	Power supply
24 to 26	P45 to P47	—	General purpose I/O port Not used (ground)
27	COMIN	I	UART serial data input from the display unit
28	COMOUT	O	UART serial data output to the display unit
29	P72	—	General purpose I/O port Not used (ground)
30	BUSYOUT	O	Busy signal output to the display unit
31 to 34	P74 to P77	—	General purpose I/O port Not used (ground)
35	AVCC	—	A/D converter power supply
36	AVRH	—	A/D converter external reference voltage source
37	AVSS	—	A/D converter power supply
38 to 41	P60 to P63	—	General purpose I/O port Not used (ground)
42	VSS	—	Ground
43 to 46	P64 to P67	—	General purpose I/O port Not used (ground)
47	P80	—	General purpose I/O port Not used (fixed at "H")
48	P81	—	General purpose I/O port Not used (ground)
49	MD0	I	Operation mode setting input (normally fixed at "H")
50	MD1	I	Operation mode setting input (Vcc)
51	MD2	I	Operation mode setting input (normally fixed at "L")
52	STOP	I	AC OFF signal input "L": AC OFF
53	P83	—	Not used (ground)
54	DIAG	I	Protection signal input from the power drivers
55	BUSYIN	I	Busy signal input from the display unit
56	AMPCE1	O	Latch signal output to the stream processor (IC305)
57	AMPCE2	O	Latch signal output to the stream processor (IC308)
58	AMPCE3	O	Latch signal output to the stream processor (IC318)
59	SDATA	O	Serial control data output to the stream processors (IC305, IC308 and IC318)
60	SSHIFT	O	Clock output to the stream processors (IC305, IC308 and IC318)
61	NSPMUTE	O	NSPMUTE signal output to the stream processors (IC305, IC308 and IC318)
62	PGMUTE	O	PGMUTE signal output to the stream processors (IC305, IC308 and IC318)
63	D/AOUT	O	Power supply voltage control signal output (0V to 2.9V)
64	RST	O	Reset signal output to the stream processors (IC305, IC308 and IC318)
65	P97	—	General purpose I/O port Not used (ground)
66	EN	O	Enable signal output to the power drivers
67 to 69	PA1 to PA3	—	General purpose I/O port Not used (ground)
70 to 74	P50 to P54	—	General purpose I/O port Not used (open)

Pin No.	Pin Name	I/O	Description
75	PWCNT2	O	Power supply (12V, 6.2V) control signal output to the power supply "H": +12V and +6.2V ON
76	PWCNT1	O	Power supply ON/OFF control signal output to the power supply "H": ON
77	RSTX	I	Reset signal input
78	P57	—	General purpose I/O port Not used (ground)
79	X1A	—	32kHz oscillator terminal
80	X0A	—	32kHz oscillator terminal
81	VSS	—	Ground
82	X0	—	Oscillator terminal
83	X1	—	Oscillator terminal
84	VCC3	—	Power supply
85	P00	—	General purpose I/O port Not used (ground)
86	NC	—	General purpose I/O port Not used (ground)
87	GP9	I	GP9 signal input from the DSP (IC605)
88	BST	O	Boot strap signal output to the DSP (IC605)
89	HCS	O	Chip select signal output to the DSP (IC605)
90	HACN	I	Acknowledge signal input from the DSP (IC605)
91	XRST	O	Reset signal output to the DSP (IC605)
92	PM	O	PLL initialization signal output to the DSP (IC605)
93 to 97	P10 to P14	—	General purpose I/O port Not used (ground)
98	ERROR	I	Error signal input from the DIR (IC606)
99	XSTATE	I	XSTATE signal input from the DIR (IC606)
100	DATAO	I	Data existence check signal input from the DIR (IC606)

• IC605 CXD9617R (MX:CXD9689AR) DSP (DIGITAL AMP Board)

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground
2	XRST	I	Reset signal input from the system control (IC501)
3	EXTIN	I	Not used (connected to ground)
4	FS2	I	Not used (connected to ground)
5	VDDI	—	Power supply
6	FS1	I	Not used (connected to ground)
7	PLOCK	O	Internal PLL lock signal output (Not used (open))
8	VSS	—	Ground
9	MCLK1	I	Clock signal input (13.5 MHz) (resonator connection)
10	VDDI	—	Power supply
11	VSS	—	Ground
12	MCLK2	O	Clock signal output (13.5 MHz) (resonator connection)
13	MS	I	Switching of master/slave operation (L : internal clock, H : EXTIN clock is used)
14	SCKOUT	O	Internal system clock signal output
15	LRCKI1	I	Sampling clock input for audio serial data
16	VDDE	—	Power supply
17	BCKI1	I	Bit clock input terminal for audio serial data
18	SDI1	I	Audio IF data input
19	LRCKO	O	Sampling clock output for digital audio serial data
20	BCKO	O	Bit clock output terminal for digital audio serial data
21	VSS	—	Ground
22	KFSIO	I/O	Audio clock signal (364fs/256fs) input/output
23 to 25	SDO1 to SDO3	O	Digital audio serial data output
26	SDO4	O	Audio IF serial output (Not used (open))
27	SPDIF	O	Not used (open)
28	LRCKI2	I	Sampling clock input for audio serial data
29	BCKI2	I	Bit clock input terminal for audio serial data
30	SDI2	I	Digital audio data input
31	VSS	—	Ground
32	HACN	O	Acknowledge signal output to the system control (IC501)
33	HDIN	I	Serial data input from the system control (IC501)
34	HCLK	I	Clock input from the system control (IC501)
35	HDOUT	O	Serial data output to the system control (IC501)
36	HCS	I	Chip select signal input from the system control (IC501)
37	SDCLK	O	Not used (open)
38	CLKEN	O	Not used (open)
39	RAS	O	Not used (open)
40	VDDI	—	Power supply
41	VSS	—	Ground
42	CAS	O	Not used (open)
43	DQM/OE0	O	Not used (open)
44	CS0	O	External memory chip select (SRAM)
45	WE0	O	SRAM write enable output
46	VDDE	—	Power supply
47	WMD1	I	Not used (connected to "H")
48	VSS	—	Ground
49	WMD0	I	Not used (connected to "H")
50	PAGE2	O	Not used (open)
51	VSS	—	Ground
52	PAGE1	O	External memory page switching signal output (Not used (open))

Pin No.	Pin Name	I/O	Description
53	PAGE0	O	External memory page switching signal output (Not used (open))
54	BOOT	I	Not used (connected to ground)
55	BTACT	O	Not used (open)
56	BST	I	Boot strap signal input from the system control (IC501)
57	MOD1	I	Operation mode signal input (L : 386fs, H : 256fs)
58	MOD0	I	Operation mode signal input (L : single chip mode, H : use prohibited)
59	EXLOCK	I	Lock signal input
60	VDDI	—	Power supply
61	VSS	—	Ground
62, 63	A17, A16	O	Not used (open)
64 to 66	A15 to A13	O	External memory address output (SRAM)
67	GP10	O	LRCKO
68	GP9	O	DECODE
69	GP8	I	AUDIO
70	VDDI	—	Power supply
71	VSS	—	Ground
72 to 75	D15/GP7 to D12/GP4	I/O	External memory data input/output (general port)
76	VDDE	—	Power supply
77 to 80	D11/GP3 to D8/GP0	I/O	External memory data input/output (general port)
81	VSS	—	Ground
82	A9	O	External memory address output (SRAM)
83 to 85	A12 to A10	O	External memory address output (SRAM)
86	TDO	O	Not used (open)
87	TMS	I	Not used (open)
88	XTRST	I	Not used (open)
89	TCK	I	Not used (open)
90	TDI	I	Not used (open)
91	VSS	—	Ground
92 to 97	A8 to A3	O	External memory address output (SRAM)
98, 99	D7, D6	I/O	External memory data input/output (SRAM)
100	VDDI	—	Power supply
101	VSS	—	Ground
102 to 105	D5 to D2	I/O	External memory data input/output (SRAM)
106	VDDE	—	Power supply
107, 108	D1, D0	I/O	External memory data input/output (SRAM)
109, 110	A2, A1	O	External memory address output (SRAM)
111	VSS	—	Ground
112	A0	O	External memory address output (SRAM)
113	PM	I	PLL initialization input terminal
114, 115	SDI3, SDI4	I	Not used (open)
116	SYNC	I	Sync/async selection input (L : sync, H : async)
117 to 119	VSS	—	Ground
200	VDDI	—	Power supply

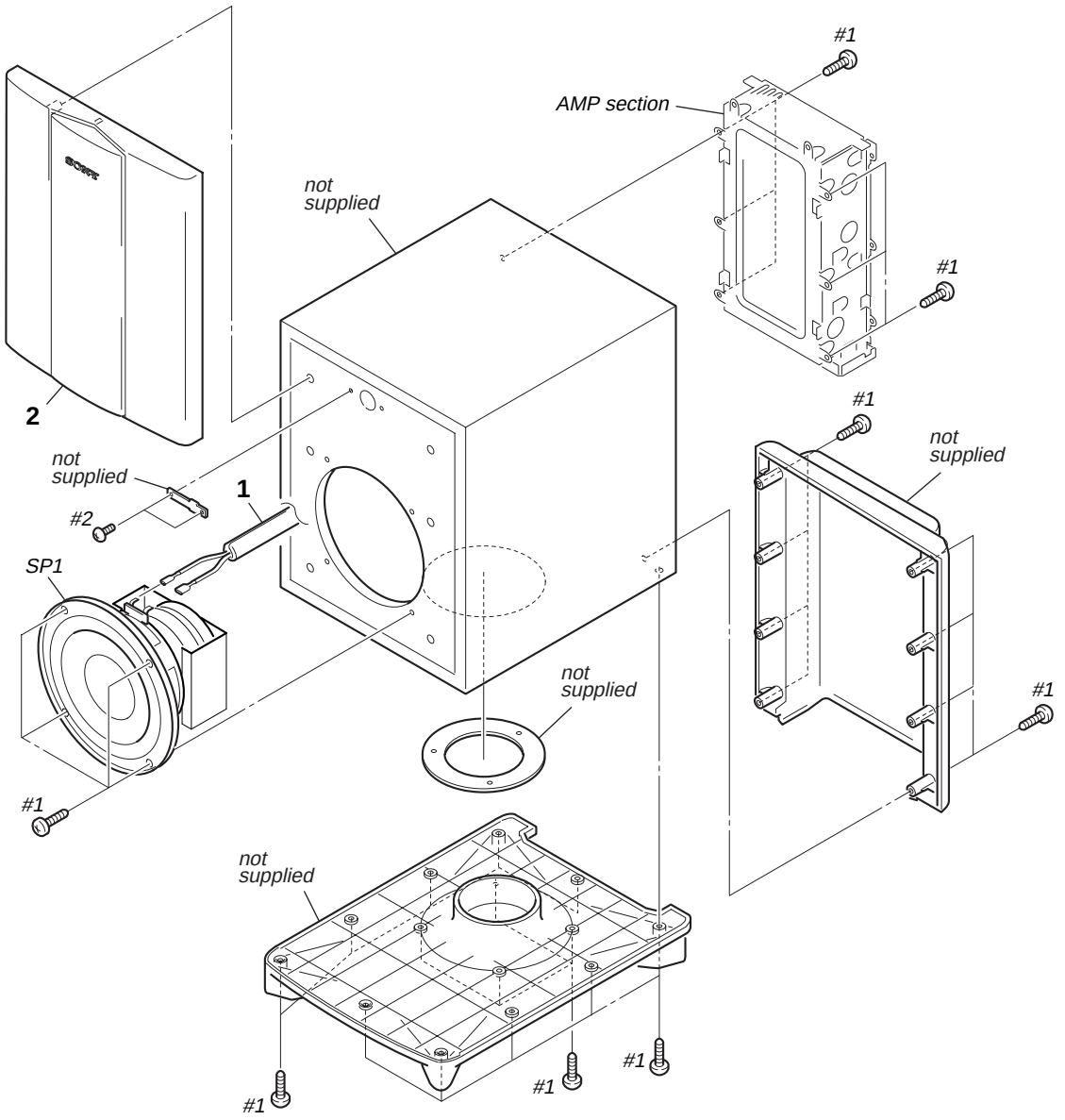
SECTION 3
EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  MX : Mexican model

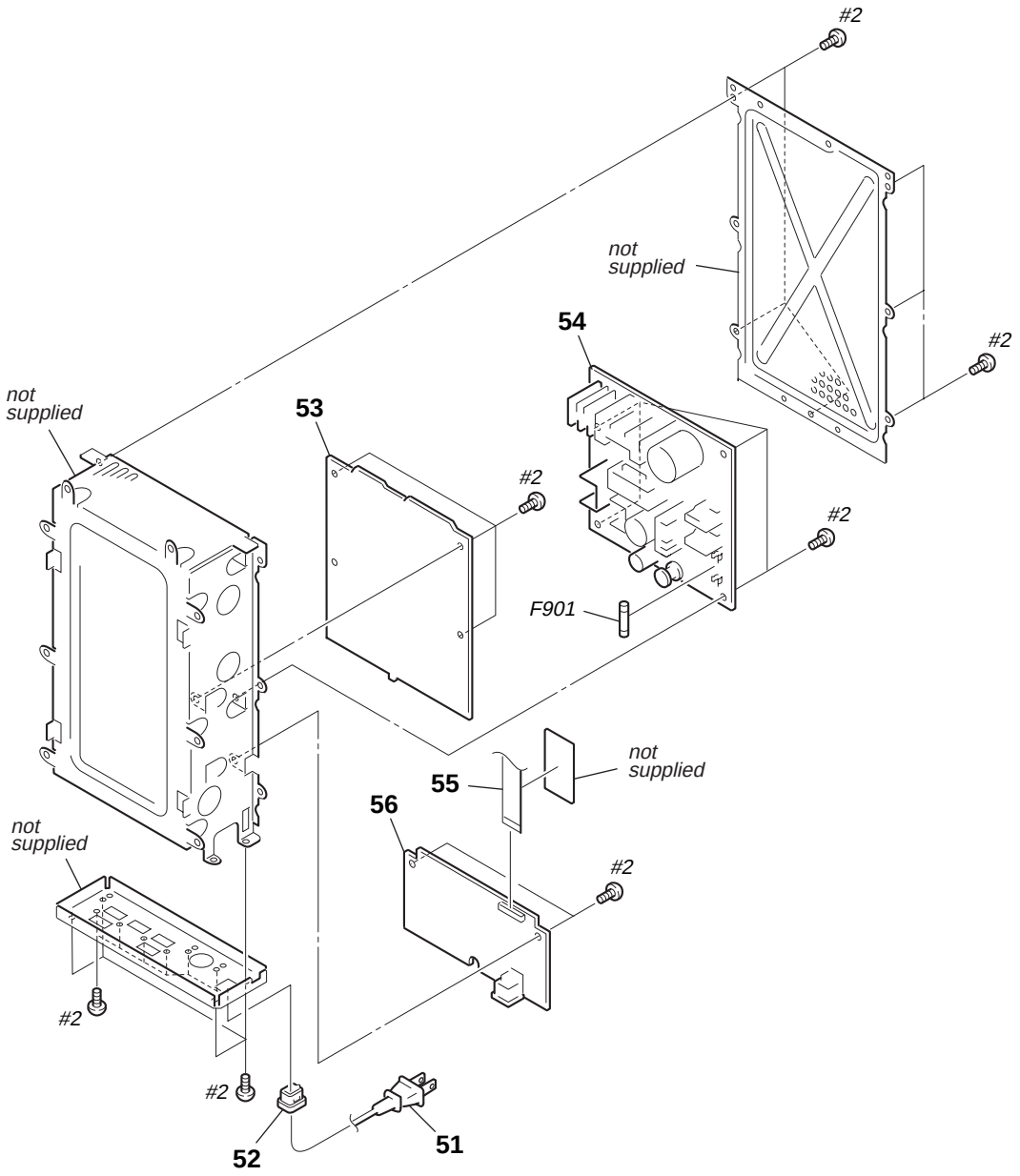
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

3-1. Cabinet Section



Ref. No.	Part No.	Description	Remarks
1	9-831-273-66	WIRE KIT	
2	A-4722-848-A	PANEL ASSY, FRONT	
SP1	1-825-188-11	SPEAKER (16CM)	
#1	7-685-564-01	SCREW +BTP 4X20 TYPE1	

3-2. AMP Section



Ref. No.	Part No.	Description	Remarks
⚠51	1-769-744-11	CORD, POWER (EXCEPT MX)	
⚠51	1-783-525-41	CORD, POWER (TRACKING) (MX)	
* 52	3-703-244-00	BUSHING (2104), CORD	
53	A-4729-917-A	DIGITAL AMP BOARD, COMPLETE	
54	A-4729-911-A	PS BOARD, COMPLETE (EXCEPT MX)	
54	A-4730-126-A	PS BOARD, COMPLETE (MX)	
55	1-775-188-11	WIRE (FLAT TYPE) (21 CORE)	
56	A-4729-914-A	DSP BOARD, COMPLETE (EXCEPT MX)	
56	A-4730-129-A	DSP BOARD, COMPLETE (MX)	
⚠F901	1-532-465-31	FUSE (T3.15AL/250V) (EXCEPT MX)	
⚠F901	1-532-747-11	FUSE, GLASS TUBE (5A/125V) (MX)	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

DIGITAL AMP

SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH

When indicating parts by reference number, please include the board name.

- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... , uPB... , µPB... , uPC... , µPC... , uPD..., µPD...
- Abbreviation
  MX : Mexican model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
	A-4729-917-A	DIGITAL AMP BOARD, COMPLETE			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C301	1-126-382-11	ELECT	100uF	20.00%	10V
C302	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C303	1-136-157-00	FILM	0.022uF	5%	50V
C304	1-136-157-00	FILM	0.022uF	5%	50V
C305	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C308	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C309	1-126-953-11	ELECT	2200uF	20.00%	35V
C310	1-104-665-11	ELECT	100uF	20.00%	10V
C311	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C312	1-104-665-11	ELECT	100uF	20.00%	10V
C313	1-136-165-00	FILM	0.1uF	5%	50V
C314	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C315	1-104-665-11	ELECT	100uF	20.00%	10V
C316	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C317	1-126-948-11	ELECT	100uF	20.00%	35V
C318	1-104-665-11	ELECT	100uF	20.00%	10V
C319	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C320	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C321	1-104-665-11	ELECT	100uF	20.00%	10V
C322	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C323	1-104-665-11	ELECT	100uF	20.00%	10V
C324	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C325	1-126-948-11	ELECT	100uF	20.00%	35V
C326	1-126-786-11	ELECT	47uF	20.00%	16V
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-104-665-11	ELECT	100uF	20.00%	10V
C330	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C331	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C332	1-136-165-00	FILM	0.1uF	5%	50V
C333	1-136-157-00	FILM	0.022uF	5%	50V
C334	1-136-157-00	FILM	0.022uF	5%	50V
C335	1-104-665-11	ELECT	100uF	20.00%	10V
C336	1-126-382-11	ELECT	100uF	20.00%	10V
C337	1-104-665-11	ELECT	100uF	20.00%	10V
C338	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C339	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C340	1-126-948-11	ELECT	100uF	20.00%	35V
C341	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C342	1-126-948-11	ELECT	100uF	20.00%	35V
C343	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C345	1-104-665-11	ELECT	100uF	20.00%	10V
C346	1-104-665-11	ELECT	100uF	20.00%	10V
C347	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C348	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C349	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C350	1-104-665-11	ELECT	100uF	20.00%	10V
C351	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C352	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C353	1-136-165-00	FILM	0.1uF	5%	50V
C354	1-136-157-00	FILM	0.022uF	5%	50V
C355	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C356	1-136-157-00	FILM	0.022uF	5%	50V
C357	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C358	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C359	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C360	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C361	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C362	1-104-665-11	ELECT	100uF	20.00%	10V
C363	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C364	1-126-948-11	ELECT	100uF	20.00%	35V
C365	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C366	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C367	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C368	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C369	1-136-157-00	FILM	0.022uF	5%	50V
C370	1-136-157-00	FILM	0.022uF	5%	50V
C371	1-136-165-00	FILM	0.1uF	5%	50V
C372	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C373	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C374	1-136-165-00	FILM	0.1uF	5%	50V
C375	1-136-157-00	FILM	0.022uF	5%	50V
C376	1-136-157-00	FILM	0.022uF	5%	50V
C377	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C378	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C379	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C380	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C381	1-104-665-11	ELECT	100uF	20.00%	10V
C382	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C383	1-126-948-11	ELECT	100uF	20.00%	35V
C384	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C385	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C386	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C387	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C388	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C389	1-104-665-11	ELECT	100uF	20.00%	10V
C390	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C391	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C392	1-126-382-11	ELECT	100uF	20.00%	10V
C393	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C394	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C395	1-136-165-00	FILM	0.1uF	5%	50V
C396	1-136-157-00	FILM	0.022uF	5%	50V
C397	1-136-157-00	FILM	0.022uF	5%	50V
C398	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C399	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C401	1-131-704-11	FILM	1uF	5%	50V
C402	1-131-704-11	FILM	1uF	5%	50V
C403	1-131-704-11	FILM	1uF	5%	50V
C404	1-131-704-11	FILM	1uF	5%	50V
C405	1-131-704-11	FILM	1uF	5%	50V
C406	1-131-704-11	FILM	1uF	5%	50V
C407	1-131-704-11	FILM	1uF	5%	50V
C408	1-131-704-11	FILM	1uF	5%	50V
C409	1-131-704-11	FILM	1uF	5%	50V
C410	1-131-704-11	FILM	1uF	5%	50V
C412	1-131-704-11	FILM	1uF	5%	50V
C413	1-131-704-11	FILM	1uF	5%	50V
C414	1-136-165-00	FILM	0.1uF	5%	50V
C415	1-136-165-00	FILM	0.1uF	5%	50V
C416	1-136-165-00	FILM	0.1uF	5%	50V
C417	1-136-165-00	FILM	0.1uF	5%	50V
C418	1-136-165-00	FILM	0.1uF	5%	50V
C419	1-136-165-00	FILM	0.1uF	5%	50V
C420	1-136-165-00	FILM	0.1uF	5%	50V
C421	1-136-165-00	FILM	0.1uF	5%	50V
C422	1-136-165-00	FILM	0.1uF	5%	50V
C423	1-136-165-00	FILM	0.1uF	5%	50V
C425	1-136-165-00	FILM	0.1uF	5%	50V
C426	1-136-165-00	FILM	0.1uF	5%	50V
C427	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C428	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C429	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C430	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C431	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C432	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C433	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C434	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNP301	1-784-924-11	PIN, CONNECTOR 8P			
* CNP302	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP401	1-564-320-00	PIN, CONNECTOR(3.96MM PITCH)2P			
CNS301	1-778-692-11	CONNECTOR, FFC/FPC 21P			
		< DIODE >			
D301	8-719-200-82	DIODE 11ES2-TB5			
D302	8-719-085-36	DIODE 11EQS04-TB5			
D311	6-500-131-01	DIODE LI116			
D312	6-500-131-01	DIODE LI116			
D313	6-500-131-01	DIODE LI116			
D314	6-500-131-01	DIODE LI116			

Ref. No.	Part No.	Description	Remarks
D315	6-500-131-01	DIODE LI116	
D316	6-500-131-01	DIODE LI116	
D321	6-500-131-01	DIODE LI116	
D322	6-500-131-01	DIODE LI116	
D323	6-500-131-01	DIODE LI116	
D324	6-500-131-01	DIODE LI116	
D325	6-500-131-01	DIODE LI116	
D326	6-500-131-01	DIODE LI116	
D331	6-500-060-01	DIODE P6SMB36AT3	
D332	6-500-060-01	DIODE P6SMB36AT3	
D333	6-500-060-01	DIODE P6SMB36AT3	
D334	6-500-060-01	DIODE P6SMB36AT3	
D335	6-500-060-01	DIODE P6SMB36AT3	
D336	6-500-060-01	DIODE P6SMB36AT3	
D341	6-500-060-01	DIODE P6SMB36AT3	
D342	6-500-060-01	DIODE P6SMB36AT3	
D343	6-500-060-01	DIODE P6SMB36AT3	
D344	6-500-060-01	DIODE P6SMB36AT3	
D345	6-500-060-01	DIODE P6SMB36AT3	
D346	6-500-060-01	DIODE P6SMB36AT3	
D351	6-500-248-01	DIODE SFPL-62V	
D352	6-500-248-01	DIODE SFPL-62V	
D353	6-500-248-01	DIODE SFPL-62V	
D354	6-500-248-01	DIODE SFPL-62V	
D355	6-500-248-01	DIODE SFPL-62V	
D356	6-500-248-01	DIODE SFPL-62V	
D361	6-500-248-01	DIODE SFPL-62V	
D362	6-500-248-01	DIODE SFPL-62V	
D363	6-500-248-01	DIODE SFPL-62V	
D364	6-500-248-01	DIODE SFPL-62V	
D365	6-500-248-01	DIODE SFPL-62V	
D366	6-500-248-01	DIODE SFPL-62V	
D401	8-719-988-61	DIODE 1SS355TE-17	
D402	8-719-988-61	DIODE 1SS355TE-17	
D403	8-719-988-61	DIODE 1SS355TE-17	
D404	8-719-988-61	DIODE 1SS355TE-17	
D405	8-719-988-61	DIODE 1SS355TE-17	
D406	8-719-988-61	DIODE 1SS355TE-17	
		< FERRITE BEAD >	
FB300	1-469-152-11	FERRITE 0UH	
FB301	1-469-152-11	FERRITE 0UH	
FB302	1-469-152-11	FERRITE 0UH	
FB304	1-469-152-11	FERRITE 0UH	
FB305	1-469-152-11	FERRITE 0UH	
FB314	1-469-152-11	FERRITE 0UH	
FB315	1-469-152-11	FERRITE 0UH	
		< IC >	
IC300	6-701-189-01	IC MC74VHC1GU04DFT1	
IC301	6-701-845-01	IC CXD9702L	
IC304	6-701-845-01	IC CXD9702L	
IC305	6-702-673-01	IC CXD9730Q	
IC306	6-701-845-01	IC CXD9702L	
IC307	6-701-845-01	IC CXD9702L	
IC308	6-702-673-01	IC CXD9730Q	
IC309	6-701-845-01	IC CXD9702L	
IC311	6-701-845-01	IC CXD9702L	

DIGITAL AMP DSP

Ref. No.	Part No.	Description			Remarks
IC318	6-702-673-01	IC CXD9730Q			
		< JACK >			
J401	1-694-656-21	TERMINAL BOARD (6CH SPEAKER) (SPEAKER OUT)			
		< COIL >			
L302	1-410-369-11	INDUCTOR CHIP	1uH		
L401	1-456-220-11	INDUCTOR	10uH		
L402	1-456-220-11	INDUCTOR	10uH		
L403	1-456-220-11	INDUCTOR	10uH		
L404	1-456-220-11	INDUCTOR	10uH		
L405	1-456-220-11	INDUCTOR	10uH		
L406	1-456-220-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q328	8-729-024-91	TRANSISTOR	2SC2712-GL-TE85L		
Q401	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q402	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q403	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q404	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q405	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q406	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q411	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q412	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q413	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q414	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q415	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q416	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
		< RESISTOR >			
R302	1-216-857-11	METAL CHIP	1M	5%	1/16W
R304	1-216-809-11	METAL CHIP	100	5%	1/16W
R305	1-216-809-11	METAL CHIP	100	5%	1/16W
R307	1-216-809-11	METAL CHIP	100	5%	1/16W
R315	1-216-809-11	METAL CHIP	100	5%	1/16W
R316	1-216-809-11	METAL CHIP	100	5%	1/16W
R317	1-216-809-11	METAL CHIP	100	5%	1/16W
R318	1-216-809-11	METAL CHIP	100	5%	1/16W
R319	1-216-809-11	METAL CHIP	100	5%	1/16W
R320	1-216-809-11	METAL CHIP	100	5%	1/16W
R321	1-216-809-11	METAL CHIP	100	5%	1/16W
R322	1-216-809-11	METAL CHIP	100	5%	1/16W
R325	1-216-801-11	METAL CHIP	22	5%	1/16W
R330	1-216-809-11	METAL CHIP	100	5%	1/16W
R333	1-216-809-11	METAL CHIP	100	5%	1/16W
R334	1-216-821-11	METAL CHIP	1K	5%	1/16W
R335	1-216-809-11	METAL CHIP	100	5%	1/16W
R336	1-216-821-11	METAL CHIP	1K	5%	1/16W
R338	1-216-821-11	METAL CHIP	1K	5%	1/16W
R339	1-216-809-11	METAL CHIP	100	5%	1/16W
R340	1-216-809-11	METAL CHIP	100	5%	1/16W
R341	1-216-809-11	METAL CHIP	100	5%	1/16W
R342	1-216-809-11	METAL CHIP	100	5%	1/16W
R343	1-216-809-11	METAL CHIP	100	5%	1/16W
R344	1-216-809-11	METAL CHIP	100	5%	1/16W
R345	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R346	1-216-821-11	METAL CHIP	1K	5%	1/16W
R347	1-216-833-11	METAL CHIP	10K	5%	1/16W
R348	1-216-809-11	METAL CHIP	100	5%	1/16W
R349	1-216-809-11	METAL CHIP	100	5%	1/16W
R350	1-216-809-11	METAL CHIP	100	5%	1/16W
R370	1-216-819-11	METAL CHIP	680	5%	1/16W
R401	1-216-849-11	METAL CHIP	220K	5%	1/16W
R402	1-216-849-11	METAL CHIP	220K	5%	1/16W
R403	1-216-849-11	METAL CHIP	220K	5%	1/16W
R404	1-216-849-11	METAL CHIP	220K	5%	1/16W
R405	1-216-849-11	METAL CHIP	220K	5%	1/16W
R406	1-216-849-11	METAL CHIP	220K	5%	1/16W
R407	1-216-821-11	METAL CHIP	1K	5%	1/16W
R408	1-216-821-11	METAL CHIP	1K	5%	1/16W
R411	1-216-849-11	METAL CHIP	220K	5%	1/16W
R412	1-216-849-11	METAL CHIP	220K	5%	1/16W
R413	1-216-849-11	METAL CHIP	220K	5%	1/16W
R414	1-216-849-11	METAL CHIP	220K	5%	1/16W
R415	1-216-849-11	METAL CHIP	220K	5%	1/16W
R416	1-216-849-11	METAL CHIP	220K	5%	1/16W
		< VIBRATOR >			
X301	1-795-286-21	VIBRATOR, CRYSTAL (49.152MHz)			
**********					
	A-4729-914-A	DSP BOARD, COMPLETE (EXCEPT MX)			
	A-4730-129-A	DSP BOARD, COMPLETE (MX)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S (EXCEPT MX)			
		< CAPACITOR >			
C501	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C502	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C504	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C505	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C506	1-126-795-11	ELECT	10uF	20.00%	50V
C507	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C508	1-126-786-11	ELECT	47uF	20.00%	16V
C509	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C510	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C511	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C512	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C516	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C601	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C602	1-164-315-11	CERAMIC CHIP	470PF	5.00%	50V
C603	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C604	1-126-795-11	ELECT	10uF	20.00%	50V
C605	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C610	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C611	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C612	1-126-786-11	ELECT	47uF	20.00%	16V
C613	1-165-908-91	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-126-382-11	ELECT	100uF	20.00%	10V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C618	1-126-795-11	ELECT	10uF	20.00%	50V
C619	1-126-795-11	ELECT	10uF	20.00%	50V
C620	1-126-786-11	ELECT	47uF	20.00%	16V
C622	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C623	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C624	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C625	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C626	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C627	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C628	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C629	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C630	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C631	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C632	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C633	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C634	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C635	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C636	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C637	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C638	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C639	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C640	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C641	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C642	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C643	1-126-786-11	ELECT	47uF	20.00%	16V
C644	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C645	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C646	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C647	1-126-786-11	ELECT	47uF	20.00%	16V
C648	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C649	1-162-918-11	CERAMIC CHIP	18PF	5.00%	50V
C650	1-162-918-11	CERAMIC CHIP	18PF	5.00%	50V
C651	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C652	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C653	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C654	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C655	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C657	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C658	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C659	1-126-786-11	ELECT	47uF	20.00%	16V
C660	1-126-245-11	ELECT	330uF	20.00%	6.3V
		< CONNECTOR >			
CNP501	1-564-723-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CNP601	1-784-926-11	PIN, CONNECTOR 11P			
CNP602	1-816-826-11	SOCKET, CONNECTOR (DIN) 13P (CONTROL)			
CNS501	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
		< DIODE >			
D501	8-719-988-61	DIODE 1SS355TE-17			
D601	8-719-988-61	DIODE 1SS355TE-17			
D602	8-719-085-36	DIODE 11EQS04-TB5			
D603	8-719-200-82	DIODE 11ES2-TB5			
D605	8-719-988-61	DIODE 1SS355TE-17			

Ref. No.	Part No.	Description			Remarks
		< FERRITE BEAD >			
FB501	1-469-152-11	FERRITE	0UH		
FB601	1-469-152-11	FERRITE	0UH		
FB602	1-469-152-11	FERRITE	0UH		
FB603	1-469-450-21	INDUCTOR	0UH		
FB604	1-469-140-21	FERRITE	0UH		
FB605	1-469-152-11	FERRITE	0UH		
FB606	1-469-152-11	FERRITE	0UH		
FB607	1-469-152-11	FERRITE	0UH		
FB608	1-469-140-21	FERRITE	0UH		
FB609	1-469-140-21	FERRITE	0UH		
		< IC >			
IC501	6-802-156-01	IC MB90478PFG-132-BND			
IC601	8-759-636-55	IC M5218AFP-T1			
IC602	8-759-242-70	IC TC7WU04F(TE12R)			
IC603	6-700-983-01	IC IS61LV6416-15T(ICSI)			
IC604	8-759-560-56	IC PCM1800E/2K			
IC605	8-759-698-76	IC CXD9617R			
IC606	8-759-825-15	IC LC89056W-E			
IC607	8-759-835-63	IC NJM2391DL1-26(TE1)			
		< JUMPER RESISTOR >			
JR602	1-216-295-91	SHORT CHIP	0		
		< TRANSISTOR >			
Q501	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L		
Q502	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L		
Q503	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L		
Q504	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L		
		< RESISTOR >			
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-216-821-11	METAL CHIP	1K	5%	1/16W
R504	1-216-821-11	METAL CHIP	1K	5%	1/16W
R505	1-216-821-11	METAL CHIP	1K	5%	1/16W
R506	1-216-821-11	METAL CHIP	1K	5%	1/16W
R507	1-216-821-11	METAL CHIP	1K	5%	1/16W
R508	1-216-809-11	METAL CHIP	100	5%	1/16W
R509	1-216-809-11	METAL CHIP	100	5%	1/16W
R510	1-216-809-11	METAL CHIP	100	5%	1/16W
R511	1-216-833-11	METAL CHIP	10K	5%	1/16W
R513	1-216-821-11	METAL CHIP	1K	5%	1/16W
R514	1-216-821-11	METAL CHIP	1K	5%	1/16W
R515	1-216-821-11	METAL CHIP	1K	5%	1/16W
R516	1-216-821-11	METAL CHIP	1K	5%	1/16W
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W
R518	1-216-809-11	METAL CHIP	100	5%	1/16W
R519	1-216-809-11	METAL CHIP	100	5%	1/16W
R520	1-216-821-11	METAL CHIP	1K	5%	1/16W
R521	1-216-833-11	METAL CHIP	10K	5%	1/16W
R522	1-216-833-11	METAL CHIP	10K	5%	1/16W
R523	1-216-833-11	METAL CHIP	10K	5%	1/16W
R524	1-216-833-11	METAL CHIP	10K	5%	1/16W
R525	1-216-821-11	METAL CHIP	1K	5%	1/16W
R526	1-216-821-11	METAL CHIP	1K	5%	1/16W

DSP **LED** **PS**

Ref. No.	Part No.	Description			Remarks
R527	1-216-821-11	METAL CHIP	1K	5%	1/16W
R528	1-216-821-11	METAL CHIP	1K	5%	1/16W
R529	1-216-809-11	METAL CHIP	100	5%	1/16W
R530	1-216-809-11	METAL CHIP	100	5%	1/16W
R531	1-216-809-11	METAL CHIP	100	5%	1/16W
R532	1-216-809-11	METAL CHIP	100	5%	1/16W
R533	1-216-809-11	METAL CHIP	100	5%	1/16W
R534	1-216-821-11	METAL CHIP	1K	5%	1/16W
R535	1-216-833-11	METAL CHIP	10K	5%	1/16W
R536	1-216-821-11	METAL CHIP	1K	5%	1/16W
R537	1-216-821-11	METAL CHIP	1K	5%	1/16W
R540	1-216-833-11	METAL CHIP	10K	5%	1/16W
R541	1-216-833-11	METAL CHIP	10K	5%	1/16W
R542	1-216-821-11	METAL CHIP	1K	5%	1/16W
R543	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R544	1-216-821-11	METAL CHIP	1K	5%	1/16W
R545	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R546	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R547	1-216-833-11	METAL CHIP	10K	5%	1/16W
R548	1-216-833-11	METAL CHIP	10K	5%	1/16W
R549	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R550	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R601	1-216-821-11	METAL CHIP	1K	5%	1/16W
R602	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W
R604	1-216-841-11	METAL CHIP	47K	5%	1/16W
R605	1-216-833-11	METAL CHIP	10K	5%	1/16W
R606	1-216-841-11	METAL CHIP	47K	5%	1/16W
R607	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W
R609	1-218-285-11	METAL CHIP	75	5%	1/10W
R610	1-216-837-11	METAL CHIP	22K	5%	1/16W
R611	1-216-821-11	METAL CHIP	1K	5%	1/16W
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-841-11	METAL CHIP	47K	5%	1/16W
R614	1-216-809-11	METAL CHIP	100	5%	1/16W
R615	1-216-833-11	METAL CHIP	10K	5%	1/16W
R616	1-216-841-11	METAL CHIP	47K	5%	1/16W
R617	1-216-854-11	METAL CHIP	560K	5%	1/16W
R618	1-216-809-11	METAL CHIP	100	5%	1/16W
R619	1-216-809-11	METAL CHIP	100	5%	1/16W
R620	1-216-809-11	METAL CHIP	100	5%	1/16W
R621	1-216-809-11	METAL CHIP	100	5%	1/16W
R622	1-216-809-11	METAL CHIP	100	5%	1/16W
R623	1-216-809-11	METAL CHIP	100	5%	1/16W
R624	1-216-809-11	METAL CHIP	100	5%	1/16W
R625	1-216-809-11	METAL CHIP	100	5%	1/16W
R626	1-216-809-11	METAL CHIP	100	5%	1/16W
R627	1-216-809-11	METAL CHIP	100	5%	1/16W
R628	1-216-809-11	METAL CHIP	100	5%	1/16W
R629	1-216-809-11	METAL CHIP	100	5%	1/16W
R630	1-216-833-11	METAL CHIP	10K	5%	1/16W
R631	1-216-833-11	METAL CHIP	10K	5%	1/16W
R632	1-216-833-11	METAL CHIP	10K	5%	1/16W
R633	1-216-833-11	METAL CHIP	10K	5%	1/16W
R634	1-216-821-11	METAL CHIP	1K	5%	1/16W
R635	1-216-833-11	METAL CHIP	10K	5%	1/16W
R636	1-216-821-11	METAL CHIP	1K	5%	1/16W
R637	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R638	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R639	1-216-839-11	METAL CHIP	33K	5%	1/16W
R641	1-216-809-11	METAL CHIP	100	5%	1/16W
R642	1-216-833-11	METAL CHIP	10K	5%	1/16W
R643	1-216-809-11	METAL CHIP	100	5%	1/16W
R644	1-216-857-11	METAL CHIP	1M	5%	1/16W
R645	1-216-833-11	METAL CHIP	10K	5%	1/16W
R646	1-216-809-11	METAL CHIP	100	5%	1/16W
R647	1-216-821-11	METAL CHIP	1K	5%	1/16W
R648	1-216-809-11	METAL CHIP	100	5%	1/16W
R649	1-216-809-11	METAL CHIP	100	5%	1/16W
R650	1-216-809-11	METAL CHIP	100	5%	1/16W
R651	1-216-809-11	METAL CHIP	100	5%	1/16W
R652	1-216-809-11	METAL CHIP	100	5%	1/16W
R653	1-216-809-11	METAL CHIP	100	5%	1/16W
R654	1-216-809-11	METAL CHIP	100	5%	1/16W
R655	1-216-821-11	METAL CHIP	1K	5%	1/16W
R656	1-216-809-11	METAL CHIP	100	5%	1/16W
R657	1-216-809-11	METAL CHIP	100	5%	1/16W
R658	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R659	1-216-809-11	METAL CHIP	100	5%	1/16W
		< VIBRATOR >			
X501	1-760-489-11	VIBRATOR, CERAMIC (5.0MHz)			
X601	1-795-363-21	VIBRATOR, CERAMIC (13.5MHz)			
X602	1-781-465-21	VIBRATOR, CRYSTAL (12.288MHz)			
**********					
		LED BOARD			
		**********			
		< CONNECTOR >			
* CNP303	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< DIODE >			
D303	8-719-071-42	DIODE SEL5723C-TP15 (POWER)			
		< RESISTOR >			
R301	1-216-813-11	METAL CHIP	220	5%	1/16W
**********					
	A-4729-911-A	PS BOARD, COMPLETE (EXCEPT MX)			
	A-4730-126-A	PS BOARD, COMPLETE (MX)			
		**********			
	1-533-293-11	FUSE HOLDER			
		< CAPACITOR >			
⚠C901	1-126-963-11	ELECT	4.7uF	20.00%	50V
⚠C902	1-104-705-11	MYLAR	0.1uF	20.00%	250V
⚠C903	1-104-705-11	MYLAR	0.1uF	20.00%	250V
⚠C905	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
⚠C906	1-117-699-11	CERAMIC	0.001uF	99%	250V (MX)
⚠C907	1-117-699-11	CERAMIC	0.001uF	99%	250V (MX)
⚠C908	1-164-816-11	CERAMIC CHIP	220PF	2.00%	50V
⚠C909	1-117-699-11	CERAMIC	0.001uF	99%	250V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
⚠C910	1-117-699-11	CERAMIC	0.001uF	99%	250V
⚠C911	1-126-967-11	ELECT	47uF	20.00%	50V
⚠C912	1-165-626-11	ELECT	390uF	20%	400V (EXCEPT MX)
⚠C912	1-137-994-11	ELECT	820uF	20%	200V (MX)
⚠C913	1-117-452-11	FILM	3300PF	5.00%	630V (EXCEPT MX)
⚠C913	1-136-203-11	FILM	10000PF	5.00%	630V (MX)
C914	1-164-156-11	CERAMIC CHIP	0.1uF		25V
⚠C915	1-115-416-11	CERAMIC CHIP	0.001uF	5.00%	25V (EXCEPT MX)
⚠C915	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V (MX)
⚠C916	1-104-332-11	CERAMIC	470PF	10.00%	2KV (EXCEPT MX)
⚠C916	1-117-452-11	FILM	3300PF	5.00%	630V (MX)
⚠C917	1-117-699-11	CERAMIC	0.001uF	99%	250V (MX)
C918	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C920	1-117-454-11	FILM	4700PF	5.00%	630V
C921	1-100-357-11	ELECT	6800uF	20%	35V
C922	1-126-960-11	ELECT	1uF	20.00%	50V
C924	1-126-953-11	ELECT	2200uF	20.00%	35V
C925	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C926	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C927	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C928	1-115-416-11	CERAMIC CHIP	0.001uF	5.00%	25V
C929	1-104-665-11	ELECT	100uF	20.00%	10V
C930	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C931	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C932	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C933	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C934	1-126-767-11	ELECT	1000uF	20.00%	16V
C935	1-126-767-11	ELECT	1000uF	20.00%	16V
⚠C936	1-117-699-11	CERAMIC	0.001uF	99%	250V
⚠C938	1-115-416-11	CERAMIC CHIP	0.001uF	5.00%	25V
C939	1-126-957-11	ELECT	0.22uF	20.00%	50V
C940	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C942	1-128-551-11	ELECT	22uF	20.00%	25V
C943	1-104-665-11	ELECT	100uF	20.00%	10V
C944	1-104-665-11	ELECT	100uF	20.00%	10V
		< CONNECTOR >			
CNP901	1-564-321-00	PIN, CONNECTOR(3.96MM PITCH)2P			
		< DIODE >			
⚠D902	8-719-085-37	DIODE 11EQS10-TB5			
⚠D903	8-719-084-58	DIODE RBV-406 (EXCEPT MX)			
⚠D903	8-719-022-92	DIODE RBV-604 (MX)			
D905	8-719-978-33	DIODE UDZSTE-176.8B			
⚠D906	8-719-085-37	DIODE 11EQS10-TB5			
⚠D907	8-719-085-37	DIODE 11EQS10-TB5			
⚠D908	6-500-241-01	DIODE SARS03			
D911	8-719-313-14	DIODE FML-22S			
D912	8-719-069-55	DIODE UDZSTE-175.6B (EXCEPT MX)			
D912	8-719-069-56	DIODE UDZSTE-176.2B (MX)			

Ref. No.	Part No.	Description			Remarks
D913	8-719-988-61	DIODE 1SS355TE-17			
D914	8-719-085-36	DIODE 11EQS04-TB5			
D916	8-719-085-36	DIODE 11EQS04-TB5			
D918	8-719-085-36	DIODE 11EQS04-TB5			
⚠D919	6-500-408-01	DIODE 11ES4-TB5			
⚠D920	6-500-408-01	DIODE 11ES4-TB5			
⚠D931	8-719-083-67	DIODE UDZSTE-1720B			
⚠D932	8-719-083-85	DIODE UDZS-TE17-22B			
⚠D933	8-719-085-37	DIODE 11EQS10-TB5			
		< IC >			
⚠IC901	6-703-098-01	IC STR-F6267D (EXCEPT MX)			
⚠IC901	6-702-338-01	IC STR-F6238S (MX)			
IC902	6-700-388-01	IC SE-B2			
IC903	6-701-021-01	IC SI-8120JF			
IC904	8-759-970-89	IC BA10358F-T1			
IC905	8-759-450-47	IC BA05T			
IC906	8-759-445-59	IC BA033T			
IC907	6-700-812-01	IC SI-8050JF			
IC908	8-759-445-59	IC BA033T			
IC910	8-759-544-04	IC NJM2103M-TE2			
		< JUMPER RESISTOR >			
JR901	1-216-864-11	METAL CHIP	0	5%	1/16W (MX)
JR902	1-216-864-11	METAL CHIP	0	5%	1/16W (MX)
		< COIL >			
L901	1-424-860-11	INDUCTOR	10uH		
L902	1-414-398-11	INDUCTOR	10uH		
L903	1-414-398-11	INDUCTOR	10uH		
L904	1-414-398-11	INDUCTOR	10uH		
L905	1-414-398-11	INDUCTOR	10uH		
L906	1-419-253-11	INDUCTOR	100uH		
L907	1-216-296-11	SHORT CHIP	0		
L909	1-419-253-11	INDUCTOR	100uH		
		< LINE FILTER >			
⚠LF901	1-424-930-11	COIL, LINE FILTER (EXCEPT MX)			
⚠LF901	1-428-906-11	COIL, LINE FILTER (MX)			
⚠LF902	1-424-930-11	COIL, LINE FILTER (EXCEPT MX)			
⚠LF902	1-428-906-11	COIL, LINE FILTER (MX)			
		< IC >			
⚠PC901	8-749-019-04	IC TLP421			
⚠PC902	8-749-019-04	IC TLP421			
		< TRANSISTOR >			
Q901	8-729-027-43	TRANSISTOR	RT1N141C-TP-1		
Q902	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R		
Q903	8-729-027-43	TRANSISTOR	RT1N141C-TP-1		
⚠Q905	8-729-111-29	TRANSISTOR	2SD1616A-TP-LK		
Q906	8-729-027-43	TRANSISTOR	RT1N141C-TP-1		
Q908	8-729-027-43	TRANSISTOR	RT1N141C-TP-1		
Q913	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R		
Q915	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R		

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PS

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
⚠R901	1-216-033-00	METAL CHIP	220	5% 1/10W	
⚠R902	1-245-391-81	METAL OXIDE	0.12	5% 1W	(MX)
⚠R903	1-245-392-51	METAL OXIDE	0.15	5% 1W	(EXCEPT MX)
⚠R903	1-245-391-81	METAL OXIDE	0.12	5% 1W	(MX)
⚠R904	1-216-341-11	METAL OXIDE	0.22	5% 1W	(EXCEPT MX)
⚠R904	1-245-391-81	METAL OXIDE	0.12	5% 1W	(MX)
⚠R905	1-216-063-91	RES-CHIP	3.9K	5% 1/10W	(EXCEPT MX)
⚠R905	1-216-061-91	RES-CHIP	3.3K	5% 1/10W	(MX)
R906	1-216-833-11	METAL CHIP	10K	5% 1/16W	
⚠R907	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
⚠R908	1-215-902-61	METAL OXIDE	47K	5% 2W	(EXCEPT MX)
⚠R908	1-215-901-61	METAL OXIDE	33K	5% 2W	(MX)
⚠R909	1-215-901-61	METAL OXIDE	33K	5% 2W	(EXCEPT MX)
⚠R909	1-215-903-61	METAL OXIDE	68K	5% 2W	(MX)
⚠R911	1-215-901-61	METAL OXIDE	33K	5% 2W	(EXCEPT MX)
⚠R912	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
⚠R913	1-249-387-11	CARBON	3.3	5% 1/4W F	
R914	1-216-826-11	METAL CHIP	2.7K	5% 1/16W	
R915	1-216-826-11	METAL CHIP	2.7K	5% 1/16W	
R916	1-216-051-00	METAL CHIP	1.2K	5% 1/10W	(MX)
R916	1-216-057-91	METAL CHIP	2.2K	5% 1/10W	(EXCEPT MX)
R917	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R918	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R919	1-216-675-91	METAL CHIP	10K	0.5% 1/10W	
R920	1-216-659-11	METAL CHIP	2.2K	0.5% 1/10W	
R923	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R924	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R925	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R926	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R927	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R928	1-216-835-11	METAL CHIP	15K	5% 1/16W	
R929	1-216-821-11	METAL CHIP	1K	5% 1/16W	
⚠R930	1-219-237-11	SOLID	3.3M	20% 1/2W	
R931	1-216-812-11	METAL CHIP	180	5% 1/16W	
R932	1-216-826-11	METAL CHIP	2.7K	5% 1/16W	
R933	1-216-820-11	METAL CHIP	820	5% 1/16W	
⚠R934	1-215-901-61	METAL OXIDE	33K	5% 2W	(EXCEPT MX)
R935	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R936	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R937	1-216-821-11	METAL CHIP	1K	5% 1/16W	
⚠R938	1-216-847-11	METAL CHIP	150K	5% 1/16W	

Ref. No.	Part No.	Description	Remarks
		< TRANSFORMER >	
⚠T901	1-437-865-11	TRANSFORMER, POWER (MX)	
⚠T901	1-437-866-11	TRANSFORMER, POWER (EXCEPT MX)	
		< THERMISTOR >	
⚠TH901	1-803-916-11	THERMISTOR, NTC	
**********			
		MISCELLANEOUS	
		**********	
1	9-831-273-66	WIRE KIT	
⚠51	1-769-744-11	CORD, POWER (EXCEPT MX)	
⚠51	1-783-525-41	CORD, POWER (TRACKING) (MX)	
55	1-775-188-11	WIRE (FLAT TYPE) (21 CORE)	
⚠F901	1-532-465-31	FUSE (T3.15AL/250V) (EXCEPT MX)	
⚠F901	1-532-747-11	FUSE, GLASS TUBE (5A/125V) (MX)	
SP1	1-825-188-11	SPEAKER (16CM) (WOOFER)	

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MEMO

REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2002.09	New